The Builder.

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ILLUSTRATIONS.

Architectural Association Excursion :—
Broughton Castle, from the North-East ..... From a Photograph.
Canons Ashby and Wroxton Abbey ..... Drawn by Mr. W. Curtis Green.
Hanwell Church, Fawsley Hall, &c. ..... " " "
Church, King's Sutton; Church Porch, Chalcombe; &c. ..... " " "

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The Liverpool Cathedral Competition.

THE drawings sent in by architects who are desirous of being admitted to take part in the final competition for the proposed cathedral at Liverpool have been hung during this week in three large rooms in the Walker Art Gallery at Liverpool. We give at the end of this article the list of names of those who have sent in drawings, but the signatures on the drawings have been covered over with cards, by order of the Committee, and we are requested to refer to special designs only by the numbers, and not to connect any number with the name of the author; a request which we shall of course comply with, even where the drawings, or the style of the author, are perfectly familiar to us.

As we anticipated, a considerable number of the designs are definite studies, some of them very elaborate, for the actual site intended; the remainder are drawings to show what their authors have already done in church work. We will comment first on the designs which are either confessedly or obviously made for the site; passing over, however, those which show nothing special for comment.

The tendency of the majority of the drawings is decidedly Gothic; which is not surprising considering the known proclivities of the Committee. Classic designs pure and simple are few and far between; and those which are exhibited are not particularly remarkable. There are, however, some interesting compromises in regard to style.

The difficulty of the site consists in its rather narrow proportions, leaving little room for the development of the transepts crosswise. It will be remembered that the longer axis of the site lies north and south, so that the usual terms of "west end" and "east end" would be misplaced; it is therefore more convenient to speak of "entrance end" and "choir end." Most of those who have made designs for the site appear to have intended the north end as the entrance end, which we consider to be the right treatment, as that is the end by which the site will be approached from the centre of the city; but as they have not all put a compass on their plans we cannot be sure of the intention in some cases.

No. 3 shows a plan of some originality, with shallow transepts with apsidal chapels facing both ways, a departure from ecclesiastical precedent; a chapel which turns its back to the altar is an anomaly. At the choir end a circular chapter-house and vestries are joined on to the apse in chevet fashion. The crossing is a large octagon space after the manner of Ely, rising into an octagon tower of low proportion. A good deal of rich tracery is shown, but the perspective sketch is poor. The author shows an alternative plan, not equal to the other.

No. 15 is a Classic design with a central area forming the nave, and covered by a large dome; on the ground floor the sides are worked externally into the aspect of transepts with colonnaded porticos. The rest of the entrance end plan is only a colonnaded approach to the real church. The columns and statues are white marble relieved against a general tone of light brown stone. There is merit in the plan; indeed, we hold that the central area plan is the right one for a modern cathedral; but the treatment of the dome, with its broad heavy ribs and succession of round openings, is poor and mechanical.

No. 23 is a set of small drawings of great merit. It shows a cathedral of a somewhat Romanesque type of Gothic, the horizontal lines strongly marked. There is a three-aisled plan with narrow passage aisles in addition, and a very wide three-aisled transept; a tower at the crossing, and two towers at the entrance end. The proportions of the plan seem hardly long and narrow enough for the site; but the whole design is in excellent taste, with a severe restraint about it; evidently the work of a competent hand.

No. 25 is completely designed for the site, with a three-aisled nave, shallow transepts, and an octagon centre like Ely. This idea of the octagon crossing, we may observe, seems to have possessed the minds of a good many of the competitors; as well it may. The centre rises into an immense octagon lantern or tower, with a large and heavy spire over it, the thrust of which is counterbalanced to some extent by an assemblage of vertical turrets round the lower portion; but even with this precaution the structure, considering that the octagon is about 90 ft. span, seems rather risky. There is a narthex and flanking towers with short spires. The style is Decorated Gothic of orthodox type; the sepia perspective sketches are very effective, but the design is rather unquiet as a whole, and wants more simplicity and concentration.

No. 31 is a pure Classic design with a dome—"A Suggestion by a Student." It is correct and in good taste, but not original. The plan is too short and wide for the site.

No. 35 is a long and narrow plan with a large octagon between nave and choir, which projects externally beyond the line of the nave, thus forming a kind of transept; the octagon has an interior arcade forming aisles round it. There is a good deal of merit in the plan, and the pencil elevations are graceful, especially the entrance end towers with their small octagonal lanterns. The style is orthodox Gothic; good work, but imitative. There is a spire over the centre of the octagon, the lower slope of which is shown through open arcades. The terrace wall towards St. James's-road is made a special feature, and is effectively treated with piers and arched recesses.

No. 37 is a fine set of coloured drawings, with a long three-aisled plan, a double narthex, or a vestibule and narthex, and shallow transepts. There is an octagon crossing rising into a large exterior tower, within which is planted a timber and leaded spire, which looks structurally more comfortable than the immense solid stone spire of No. 25. The style is Early Decorated of the most imitative type.

No. 38 is a really original and clever design. It shows a long plan with a centre aisle very wide in comparison with the side aisles, which are divided from it by columns coupled transversely. But in the middle and at the end of the nave the centre aisle breaks into a square space, each of which is marked above by a square tower, the two towers identical in design, and supported externally by small projecting transepts. These two towers rising from the centre and end of the nave form quite a new and very effective grouping. The style is somewhat Romanesque in feeling (each tower is roofed with a leaded dome) but not imitative—it cannot be labelled; narrow pilasters and square terminations are its note. The entrance porch is circular on plan, and

decorated with bas-reliefs and other sculpture.

No. 40, "A Suggestion for a Modern Cathedral," is amusing and rather clever as far as plan is concerned. The axis is east and west, across the site; a rectangular choir faces eastward, and the nave is a great semicircle in the form of a theatre, the choir where the stage should be. Subsidiary buildings (chapter-house, &c., &c.) form long blocks to the right and left of the choir. Unfortunately the architectural treatment, in the usual sense of the word, is childish; nor do we think the spectacular arrangement of the nave will really appeal to any sympathies; but the author deserves credit for a new idea.

No. 45, called "The Cathedral Church of St. Paul,"* is, from the perspective, evidently designed for the site, as the low level ground of the cemetery is shown. The plan is practically three aisles of equal height, after the likeness of Bristol, but centre and side aisles are divided by double piers placed at some little distance from each other, forming really narrow intermediate aisles. This space is vaulted in each bay by a longitudinal vault at right angles to the main transverse vaults, a bold and fine idea. The crossing is an octagon rising into a lofty octagonal tower, within which however is a spire which is only seen from the interior, through the opening of the crossing vault. It could only be seen in a very foreshortened sense, and it may be doubted whether the effect would be worth the cost. The style is Early Gothic of somewhat French character. As the author takes the perspective view from the low ground of the cemetery, we here note that it is surprising that neither he nor any other competitor seems to have appreciated the grand effect which might have been obtained by carrying the transept walls on this side visibly down to the low ground, making them the facing of the bank. It is a suggestion of the site which seems to have been overlooked.

No. 57 shows a three-aisle plan with the aisles all the same height, and narrow passage aisles added. The architectural treatment is of orthodox Early English character.

No. 58 is a plan only, which fits the site well, and might be susceptible of effective treatment as a Classic design.

No. 59; no plan; elevation of entrance front and interior and exterior perspectives of great elaboration. Ambitious gimcrack.

No. 75 shows fairly good Gothic elevations, with some originality in the finish of the towers. The plan wants definite motive.

No. 83 A very curious design shown in small drawings; the perspective, taken from the low ground, appears to be a photograph of the actual site with a perspective sketch photographed on to it. The plan is a long basilica with three aisles and square piers, each bay of the nave being treated with a quarter-circle apse in the exterior aisle wall. The chancel finishes in a triple apse making a trefoil on plan. To the great bewilderment of some of the committee, as we observed, the author has adopted the suggestion made many years ago by Fergusson, of showing the vaulted roof externally in its naked simplicity, as a ridge-and-furrow surface, without the usual covering of a timber roof. There is much to be said for such a treatment, in principle; but if adopted, some attempt should surely be made to treat the exterior in a more decorative manner. The elevations and sections are blocked in, in the simplest manner, with hardly any indication of detail, and the sketch of the tower in the perspective looks almost like a joke; a conical chimney-like mass with two tiers of large open arches near the top with bells visible in them. Nevertheless, this set of drawings contains an architectural thought, and is evidently the product of an original mind. We should not have much difficulty in putting the name to it, in spite of the committee's veiling card.

No. 85 shows an ordinary three-aisle plan with narrow shallow transepts and a tower at the crossing. The proposed architectural treatment is indicated in two alternative perspective sketches, one showing a sober Early Decorated design, the other an example of "L'Art Nouveau" both in design and in manner of drawing; a building nearly white against a shaded background, with battering central tower, battering buttresses, sculpture cropping up in unexpected places; white spaces and bits of concentrated ornament here and there. A very clever sketch, but quite inadequate in dignity and style for a cathedral; it might furnish a hint for a picturesque parish church.

No. 86 shows a double transept on plan, the tower over the crossing of the first and smaller one. The plans and elevations are cut out in white paper and pasted on a grey paper; a little dodge which attracts the average committee-man but will not draw the assessors. The style is orthodox Early English. The perspective, with its central and two entrance spires, groups effectively.

No. 44, entitled "The Cathedral Church of St. John," appears as if intended for the site. The exterior seems all buttress. The main tower, over the choir, is effectively carried on four groups of four piers each, arranged at the angles of a square. The details are imitative Gothic, but there is some power and originality in the general design. The enormous buttresses, however, plain masses of stone, go far to destroy the scale.

No. 98: a peculiar plan, with long narrow nave and two transepts, the first with a central tower, the second with an octagon centre covered by a dome with a rich Gothic balustrade at its base. The severe style of the entrance end towers suggests Coutances; the centre tower has a contrasted and more ornate treatment. Each tower has a spire. Except for the dome there is nothing very original, but the work is good, except for the lantern or finial on the top of the dome, which is bad in outline and wrong in scale.

No. 101, signed "Liverpool," has what architecturally is a single-span nave, for the side aisles can only be regarded as passages. The plan and arrangement of the piers is very peculiar, and the whole should have been illustrated by a section. The piers show a large circular column towards the centre of the nave, with a long tapering block towards the aisle, and a small intermediate shaft between, in line with the extremity of this part of the piers. The main piers and the shaft are answered by principal and subordinate buttresses on the exterior, so that the general scheme is that of coupled bays. The wide crossing is square on ground-plan, but develops into an octagon lantern above the roof. The general design, with its rich bits of tracery contrasted with plenty of plain walling, is very effective. The octagon lantern or tower is kept low, with a conical slated roof within a richly-treated open-work parapet, broken at the angles by high piers containing statues in niches. In regard to the peculiar plan of the nave piers, it is suggested that the wide spaces formed by the projecting blocks would be available for sculpture or sacred pictures. There is a great deal of merit in this design.

Near this is a set under the title "Cathedral Church of St. Peter," the number of which we omitted to record. It has a very peculiar and decidedly clever plan, which can hardly be described without a diagram; the central space is a hexagon, and around this are chapels which project partially beyond the main nave line, and make an exterior line of part of an octagon diversified by shallow projecting bays. This elaborate central plan is worked out, in the perspective, into a tumult of contrasting surfaces and planes, with rich window tracery, which is very effective. Some portions of the treatment seem a reminiscence of the east end of Wells. This design is both clever and ambitious, but as a whole it wants reticence and what is sometimes called "pulling together." Still, the treatment of the centre portion of the plan is distinctly an idea.

If we have passed over, among the specially prepared designs, some that were shown by very large and elaborate drawings, this is not because we did not see things which were so very patent to the optic nerve, but because we did not think them worth any serious discussion. Large drawings do not make great architecture. On the whole, the collection of specially prepared designs can hardly be said to be a very remarkable one, considering the importance of the occasion. There is far too much of mere reproduction of Mediæval Gothic, and a want of a distinct and governing motive in many of the designs. What we want is to see a building which embodies an architectural idea, well-marked in itself, and governing the whole design; and of this there is not much, too many of the designs representing what one may call the average notion of a mediæval cathedral. Of those which show something beyond this, and whose authors might usefully be asked to take part in the final competition, we should be inclined to name 23, 38, 45, 83, and 101.

Of the drawings which are sent as examples of what the authors can do, but which are not designed for the site, some are mere collections of drawings of executed work, others are studies for the idea of a modern cathedral, but not specially for this site. Of those which represent executed work we noticed under Nos. 20, 29, 33, and 43 the easily recognisable works of architects who have made a reputation in church architecture. Under 41 we recognise the hand of a very able man among the younger generation of architects, who has produced many designs for churches, as well as the design for a modern cathedral shown (and which was exhibited at the Royal Academy some years ago), all characterised by refinement and originality of design, but who has not hitherto had any adequate opportunity.

* We understand that the special dedication of the new Cathedral is not decided on. Two or three of the competitors seem to have thought they should make suggestions on this point.

We suggest that this competitor is one who ought to have a chance. Among the drawings are two examples of church work by French architects, as we see both by the style and the French lettering on the drawings; but we hope, in Mrs. Quickly's phrase, that "it has not come to that yet." There is also a collection of Dutch drawings, which we recognise as the work of a man very eminent in his own country, but we do not think he would produce a cathedral satisfactory to English associations, nor do we see any reason why the Committee should go beyond our own country for competitors, or that they would be likely to get any advantage by doing so.

No. 1 is a study for a rather graceful cathedral in Italian Classic style, with an octagon central area and an antenave; a low circular dome over the octagon. The design, however, cannot claim higher praise than that of being agreeable. No. 18 shows a design for a cathedral in Late Gothic style, with an octagon dome over the crossing; this is a feature to be considered; otherwise the design is only good imitative Gothic of the conventional type. No. 28 shows a study for a modern cathedral plan with widely projecting transepts and a front block with narthex also extending far to right and left of the nave front; these blocks are connected to the ends of the transepts by arcaded cloisters, so as to leave a cloister court in each side of the nave. The plan has narrow aisles for passage only, and an octagon central area; the whole shows originality in plan; the design is imitative Late Gothic, and, as such, very well carried out.

No. 46 is a rather remarkable "Study for a Cathedral"; it has an octagonal crossing with a dome over it, which is buttressed by small towers planted at an angle of 45 deg. against the oblique sides of the octagon; the grouping of these square towers and small spires around the central dome is very effective. The same idea of oblique angles is carried out on the entrance front, where the flanking towers are set at an angle of 45 deg. with the line of the nave, connected by a narthex with front segmental on plan; a novel but rather questionable effect. The centre, however, is fine and original. The style adopted is Late Decorated Gothic. No. 51 is a rather remarkable "Study for a Cathedral," in which a design of generally Gothic detail is combined with a dome of classic appearance and outline. The transition from early and geometrical Gothic to something like classic feeling in the upper and central portion of the design is cleverly managed, and the whole shows a good deal of thought; the decorative treatment of the exterior architecture, however, though rich, is perhaps what may be called somewhat mechanical. No. 53, "A Sketch Design for a Modern Anglican Cathedral," is a very clever and original conception. The plan shows a three-aisled nave with a circular crossing and transepts marked by segmental circles projecting beyond the line of the nave walls. The entrance front has a tower in the centre, of rather Lombardic character, with open arches and visible bells in the upper story. The crossing is roofed by a dome almost exactly on the lines of the St. Sophia dome, with semi-domes towards the transepts and an apsidal-ended choir; eastward of the choir is a small cloistered court. The architectural treatment is a kind of mingling of Byzantine and north Italian elements, shown in sepia-tinted elevations. The interior would perhaps be more effective than the exterior, but this is a very clever and thoughtful study, and we should like to see its author invited for the final competition.

Under 56 are various sketches and perspectives, all showing good work; and under No. 55 is a photograph of a fine and dignified church tower, which we seem to know, but cannot identify at the moment. No. 62 is a sketch design with no plan, the style a clever mingling of French Renaissance with touches of Gothic detail, but in general effect more suggestive of a town hall than a cathedral. All the work shown under No. 66 is very good. No. 68 is a "Design for a Nineteenth Century Cathedral" of considerable ability, though we do not see why it is peculiarly suitable to or expressive of the nineteenth century. The plan shows a long narrow nave with piers arranged so as to form three square compartments with interspaces between them and narrow aisles running past them; each of these is marked externally by a transverse gable carried to the outer walls of the aisles; two towers form transepts at each flank of the crossing. The style is Early Gothic well treated, with plenty of plain spaces of masonry; and on the whole this is an interesting and able design.

We can only just briefly allude to two or three more. No. 69 is a design prepared in 1886 as a suggestion for the Monument-place site, with a central west tower and spire facing down London-road, the plan spreading eastwards as the roads diverge, with flanking towers at the transepts. It is only ordinary imitative Gothic, but the general idea for the treatment of the site is very good. The various drawings under Nos. 79 and 91 are all good work. No. 95 is a design for a cathedral with a long narrow three-aisled nave and a tower separated from the entrance by an arcaded loggia; the tower is a fine one, very well designed, and the entrance front is effectively treated. This may perhaps have been made specially for the site; it is not quite obvious whether it is or not. No. 94 is a set of very large drawings, excellent as drawings, for a purely Classic domed cathedral on a Greek cross plan, treated in a scholarly manner, but not particularly interesting; and the plan shows but a very commonplace treatment.

The following is the list of architects who have sent in drawings:—

R. A. Briggs.	F. Walley.
René Buyck.	"Burgos."
Fred. H. Dudley.	E. P. Warren.
E. Goldie.	W. Woodward.
J. Dale.	Leonard Stokes.
Albert D. C. Capronnier.	J. F. Doyle.
A. W. Crook.	G. & I. Steane.
Geo. Simmonds.	S. O. Herbert.
Geo. Taylor.	G. Walesby Davis.
F. R. Kempson.	H. C. Corlette.
Hippolyte J. Blanc.	J. J. Creswell.
de Mathelin.	J. Jeffrey.
Basil Champneys.	Beresford Pite.
W. J. Medcalf.	J. Burnet & Son.
John Bloore, Jr.	— M'Kenzie.
R. W. Collier.	C. Spooner.
Austin & Paley.	Murray & Murray.
W. D. Caroe.	H. Beecroft Downs.
W. J. H. Leverton.	J. Honeyman.
A. Greothaert.	Eastwood & Greenslade.
F. Billerey.	Reed Smart & Tappin.
A. Colpoys Wood.	P. A. Robson.
Sir Thomas Drew.	M. Metdepinninghen.
J. Brooks, Son, & Godsell.	W. H. Bidlake.
Robt. W. Gibson.	Wm. Mackay
J. Robertson.	C. J. Andersson.
Walter le Riele.	Hy. J. Price.
E. Dobbeleêra.	J. Th. J. Cuypers.
C. H. Miletsam.	A. E. Street.
F. M. Simpson.	F. E. Butler
Alph. Gosset.	F. Todd.
E. Grayson.	Jas. H. Cook.
C. Demaeght.	C. E. Powell.
G. P. D. Saul.	W. C. Bishop.
J. Oldrid Scott.	M. Stark.
C. A. Nicholson.	H. B. Carre.
H. A. Prothero.	B. M. Ward.
W. H. Jewitt.	W. R. Gleave.
J. Coates Carter.	H. K. Bromhead.
E. A. Heffer.	W. Boswell.
A. H. Skipworth.	G. H. Shackle.
F. H. & J. Sparrow.	Max Sainsaulieu.
J. A. Wilson.	Temple Moore.
Chas. L. Bell.	A. D. Sharp.
Cram Goodhue & Ferguson.	H. Wilson.
	Reilly & Peach.
Edouard Ramaekers.	W. F. Tapper.
B. Ingelow.	Goodwin S. Packer.
Colson, Farrow, & Nisbett.	G. G. Scott.
	C. V. Johnson.
G. H. Fellowes Prynne.	J. Atwood Slater.
Gerald C. Horsley.	

The names are taken from the typewritten list furnished by the Committee, which seems to have been very carelessly done. We have corrected a good many mistakes in the spelling of the names known to us; if there are others, among the names we do not know, the Committee, or their Secretary, must bear the blame.

PETERBOROUGH CATHEDRAL.

BY a rather curious coincidence, the same week which has witnessed the exhibition of suggestive designs for a modern English cathedral has witnessed also the celebration of the completion of the repairs necessary for the preservation of one of the most important of our ancient cathedrals. On Wednesday there was a special service of Thanksgiving held to mark the completion of what is called in the service-book the "restoration," but should more correctly be called the "repair," of the west part of Peterborough Cathedral. We may take the opportunity to recapitulate briefly what has been done, and notice the result.

The west front, as every one knows, had been out of the perpendicular, and leaning outwards away from the building, from a period at all events previous to the erection of the late Gothic porch and parvise built between the centre piers, as its masonry had been adjusted to the present line of the piers. But it was the damage caused to the pinnacles of the flanking towers by the great storm of March 24, 1895, which led to the erection of the scaffold and the careful examination of the whole structure. It may be mentioned as a remarkable incident that in this storm one of the lofty and picturesque pinnacles of the south-western tower, [triangular] on plan, was forced from its base and lay back against the face of the central spire, without coming to the ground. The flanking towers, however, are on better foundations than the rest of the west front, and did not require anything but the repair of the local injury caused by the force of the gale. But the occasion was taken for a thorough examination of the whole structural condition of the front, resulting in the discovery of the dangerous state of the structure which was

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fully described in our columns at the time. We need only here remind the reader that the two main elements of danger consisted in the inadequate nature of the foundations of the two central piers, which had been the originating cause of failure, and in the wretched construction of the filling of the vault between the great arcade and the main west wall of the church, and of the interior portions of the arches and gables of the portico, all which were of small unshaped stones set in mortar which had long ago lost whatever cohesive property it may once have possessed, and ran out like water wherever an opening was made. The groining of course had spread in consequence of the piers leaning outward, and the north and south gables had been twisted and cracked, more than the central one, owing to the very fact of the comparatively stable condition of the piers adjoining the flanking towers; the impost on one side of the arch remaining stationary, while that on the other side had gone over more than 2 ft. The centre gable was much less strained than the two side ones, owing to the fact that both its supporting piers had moved out to the same extent, and the whole, imposts, arch, and gable, had settled over together. Hence it was not thought necessary to take down the centre gable, which, though out of the perpendicular, was in a tolerably coherent state, but only to repair it in places where the stonework was decayed.

The work done has been, first, to underpin the two centre piers of the great arcade and carry them down to the limestone rock, filling up with concrete an ancient well which was in close proximity to them, and which the Mediæval builders had calmly disregarded; secondly, to take down and rebuild the northern and southern gables and the upper portions of the arches carrying them, to build a solid backing behind the arches, and to take down and rebuild the vault over the portico. The original groin-ribs of the vault have been reset, made up with new stones as far as necessary to fill in the increased width caused by the settling outward of the piers. The facing stones of the gables were numbered before being taken down, and are now nearly all replaced in their original positions.

We were always of opinion that the real and most satisfactory thing to have done would have been to have taken down the whole—perhaps a portion at a time, numbering the facing stones, and to have rebuilt it truly vertical, on a concrete foundation. We admit however, that this was a counsel of perfection which, though more satisfactory in the result, would have been a long, difficult, and very costly operation, for which it might have been impossible to find the funds, since the Government of this country will vote no public money for the repair and preservation of buildings which are of national interest. What has been done will probably prevent the front from going over any more; the foundations are now firm and secure, and the upper masonry, besides being strengthened with new backing, is tied back to the main west wall (some 7 ft. or 8 ft. thick) by steel ties with gun-metal flanges. What is satisfactory is that all this has been done with so very little disturbance or alteration of the original appearance of the front; in fact, no one who knew the building before the repairs would be at all likely to guess, from the outward appearance of the front, that two of the gables had been taken down and re-erected. In the north gable, which required the most repair, 2,006 facing stones were taken down, and of these all but 170 have been replaced in their original positions, and of the 170 new ones, replacing stones which were too much decayed to be retained, the majority are of an unimportant character. The present appearance of the front is indeed the best practical reply to the absurd clamour which was raised by some archæological fanatics that the front was being wantonly and unnecessarily destroyed. It has, in fact, been preserved from impending destruction.

Some of the most decayed shafts in the arcading have been renewed with the local material once largely used in the fabric, and now known as Alwalton stone, or Alwalton marble, for it is in fact a marble, and takes a polish as such. The old quarry is worked out, but deposits of the marble have been found in the neighbourhood. It varies in colour a good deal, as is seen in the new shafts worked into the back of the portico, and is only now obtainable in comparatively small pieces, never more than 5 ft. in length; though it must have existed in larger deposits formerly. There is preserved in the choir triforium a curious relic executed in this stone; the main portion of a large circular lavatory fountain of Early English work, divided into small radiating basins all round for washing in. The support is gone; it lies on the floor. In spite of its date, the series of scooped-out basins give it a curiously modern appearance.

The work done on the west front, as we need hardly remind our readers, was commenced under the late Mr. Pearson, and completed under the direction of Mr. G. F. Bodley.

In one of the wall arches at the back of the portico this inscription has been cut in the stone, in memory of the late Dean:—

Remember W. Clavell Ingram, D.D., Dean 1893-1901 A.D., under whom the repair of the west front was began, and in whose memory it was finished in 1902.

The total amount expended on the repair of the west front and of the portions of the cathedral immediately contiguous to it, has been about 13,000*l*. The end wall of the north transept, which is leaning outwards, is the only portion of the fabric which now appears to call for structural repair on a large scale. It is at present shored up, though we understand that it has shown no recent signs of settling further; and indeed the shores would hardly keep it if it were inclined to go. But it is a part of the building which cannot at present be considered to be in a structurally satisfactory state.

NOTES.

The Venice Campanile.

SIGNOR BONI has the investigation of the ruins of the Campanile in hand, and is no doubt the most competent person in Italy to superintend the sorting out and identification of the various portions of the remains. We are glad to hear that Sansovino's splendid gates to his little loggia, the elegant design of which stood in such curious contrast, as to scale and style, with the tower against which it was built, are hardly injured. These gates were illustrated in a large plate in our issue of July 2, 1887. There appears now to be evidence that the fall was owing to something else than the giving way of the foundations, and that the walls were weakened and cracked, but the evidence seems doubtful and contradictory, and it may be questioned whether the condition of the walls was cause or effect; at all events the event ought to lead to a careful examination of the foundations of this and other erections in the vicinity, which, as already observed, are of far more value. The talk seems now to be of rebuilding the Campanile as it was, it being stated that there are so many of the old stones available that it will be rather a re-building than a restoration. We doubt very much whether, when everything has been picked out that can be, this will be found to be the case; and we regard it rather as an argument in advance against objectors to restoration. But whether the original stones can practically be rebuilt or not, the desire to rebuild it just as it stood is a characteristic indication of the modern state of feeling about architecture. Whatever its historical interest and association, the Campanile was architecturally a crude and clumsy design; it would be possible to retain (for the sake of pictorial effect) its general proportions, but to rebuild it on a better design; especially to increase the proportionate height of the stalk and to get rid of what we have called the "box" stage beneath the spire. In any really lifelike age of architecture the opportunity of its fall would have been taken to improve it in rebuilding. Now, the great object appears to be to rebuild it as bad as it was before.

Proposed Site for the County Hall.

THE idea of a new County Hall for the London County Council is again under serious consideration, having been practically dropped since the rejection of the Bill for the Spring Gardens site in 1896. The "Special Committee on New Offices" now report in favour of the purchase, at a cost of 900,000*l*., of a site described as bounded on the north by William-street, the Tivoli Music Hall, and Adam-street (this last is an inaccurate description, as Adam-street runs north and south), on the south by the Embankment Gardens, on the east by the Hotel Cecil and on the west by York-buildings. Do our readers realise what the site thus vaguely described really is, and that the scheme involves the destruction of the whole of the quarter built by Robert Adam, including the Adelphi-terrace and John-street, and the historic house of the Society of Arts? Considering the important position held by Adam in the history of modern English architecture, and the fact that this quarter was the memorial, as it were, of his and his brothers' architectural success, the project to coolly pull it all down for a new building site appears to us, as we think it will to many others, a piece of sheer vandalism. If there had only been some reference in the Report to the historic interest of the buildings we should have felt less strongly on the subject; but the nature of the property is entirely ignored, and it is referred to merely as if it were any valueless collection of old houses. Some action ought to be taken against this proposal for the wanton destruction of the work of a man who made such a mark in the world as Robert Adam.

The Langham-place Fatality.

THE coroner's jury have returned a verdict of accidental death in the case of the fatal accident in Langham-place where a lady was killed by the fall of a coping of the church to which a wire rope had been attached. Considering that the thing had been done before without any bad consequences, by the same persons, it was hardly possible that any other verdict could be given in this case; but we think that after this painful proof of the danger of attaching ropes, on which a heavy strain may come, to portions of buildings not constructed for that purpose, no such verdict ought to be returned in any future case of the kind. There ought to be a by-law placing the attachment of ropes for flags and decorations under the supervision of the District Surveyor, who at present is powerless in the matter. But even without such a by-law, after this warning those who attach ropes to any part of a building, without taking proper advice as to the safety of the attachment, ought to be made responsible in law for any injury caused by their action.

Municipal Authorities' Rights to Costs.

AN interesting decision to the general public in these days of municipal trading has been given by the Court of Appeal in the case of Jeremiah Ambler & Sons *v.* the Corporation of Bradford (the *Times*, July 22). The Corporation was sued by the plaintiffs to prevent them from diverting the flow of water from Bradford Beck. The plaintiffs failed in their action, and the defendants, under the Public Authorities Protection Act, 1893, now claimed to be entitled to costs as between solicitor and client. Section 1 of the Act provides, where any action is commenced in the United Kingdom against any person for any act done, or for any neglect or default in the execution of any act done, "in pursuance or execution of any Act of Parliament, or of any public duty or authority," then, if judgment is obtained by the defendant, it shall carry costs as between solicitor and client. The question under this section has been whether this enactment will extend to public authorities engaged in municipal trading. In the case of the Attorney General *v.* Margate Pier and Harbour Co., where the earnings were appropriated to the shareholders, it was held in the Chancery Division that the Act had no application; and in the case of the Ydun, the President of the Probate Division expressed the opinion that it would not apply to railway companies. In the present case the report is silent as to the purpose the Corporation used the water for, but the effect of the judgments is to decide that where a Municipal Corporation, in pursuance of an Act of Parliament, engages in trading, but applies the profits to the relief of the ratepayers, then, if their operations are directly concerned with their public duty, they are within the Act. The Court of Appeal recognised the hardship this Act might impose; and, indeed, it is impossible to exaggerate it. For instance, a person injured by what he deems to have been negligence on a municipal tramway can only take action at the risk of being mulcted in solicitor and client costs.

Extraordinary Traffic on Highways.

THE question of the liability for extraordinary expenses caused by extraordinary traffic on highways is one of a good deal of importance to contractors and builders. By the Highways and Locomotives Act, 1878, where it appears to the Authority which is liable to repair any highway that extraordinary expenses have been incurred by such Authority in repairing such highway by reason of the damage caused by extensive weights passing along the same, or extraordinary traffic thereon, such Authority may recover from any person, by or in consequence of whose order such weight or traffic has been conducted, the amount of such expenses. In the recent case of the Egham Rural District Council *v.* Gordon, the question arose whether the person by, or in consequence of whose order, the extraordinary traffic was caused was a builder or a building owner. It appeared that the building owner was about to build a house in the plaintiff's district, and in March, 1901, he gave an order to the Bracknell Brick and Tile Co. for 250,000 bricks to be delivered on the land where the house was to stand. The company, without the knowledge of the building-owner, made arrangements with a contractor for the delivery of the bricks by means of a traction-engine and trucks, and it was admitted that the roads had been damaged by the use of the traction-engine and trucks, and would not have been damaged if the bricks had been delivered in carts in the ordinary way. In this litigation the building-owner was the defendant, but the Court held that the traffic was not caused in consequence of his order. Of course there may be circumstances when the owner of property who is about to build a house might be liable, but the result of this case is to show that where there is an independent contractor he, and not the building owner, will be liable to the Highway Authority, and may have to incur expenses which will take away the profit from his contract.

Water for Domestic Purposes.

THE case of the Barnard Castle Urban District Council *v.* Wilson and others decided in the Court of Appeal, raises an interesting question as to what is a use of water for domestic purposes. The Urban Authority, under the Public Health Act, 1875, had the right of supplying water, and the respondents were the Governors of the North-Eastern County School, an institution not carried on for profit. The governors of the school had erected a swimming-bath, and claimed to have the right to the water as for domestic purposes without paying a special rate. Two Acts of Parliament govern the subject, Section 53 of the Waterworks Clauses Act, 1847, simply enacting that the occupier of any dwelling-house, having paid the rate, shall have the right "to demand a sufficient supply of water for his domestic purposes," and Section 12 of the Waterworks Clauses Act, 1863, defining certain uses as not being domestic purposes, viz., amongst other things a supply of water "for any trade, manufacture, or business." A school has been held to be a "trade or business" in the case of Doe *v.* Keeling, even when carried on as a charitable institution, Rolls *v.* Miller, but the point in the present case was whether the water supplied to the swimming bath was required for any purpose connected with the business of the school. Mr. Justice Buckley, in the Court below, had held it was not but the Court of Appeal (Lord Justice Vaughan Williams with some hesitation) held it connected with the business, being apparently assisted in this conclusion by the fact that the boys were taught swimming. The Court of Appeal also held in such cases regard must be had to what could reasonably be considered a necessity for domestic use. One of the exceptions in the Act of 1863 is water used for any ornamental purpose, but we are glad to say it appears not to have been argued the bath fell within this exception.

Sparking in Electric Switches.

THE paper by Messrs. Russell and Paterson on "Sparking in Switches," recently published in the *Journal* of the Institution of Electrical Engineers, treats of a subject which we have always considered of pressing importance owing to the general adoption of higher pressures of supply. They have discovered several simple laws governing the lengths of these sparks, and so have enabled manufacturers to rate their switches themselves instead of being forced to send them to testing laboratories to find out whether they will survive the rough-and-ready test suggested in the Institution rules. When a direct current circuit is quickly broken, a spark ensues at the point of break. Now, for pressures greater than 200 volts, this spark increases rapidly in length, and if the contact pieces of the switch are not sufficiently far apart an arc will be set up, and it will be impossible to break the circuit with the switch at all. If the fuse protecting the circuit be too large then the arc will melt away the contact pieces, and in certain circumstances there might be a risk of fire. The authors suggest as a basis for rating switches that the "factor of safety" should be two. This does not mean that with double the current the switch is rated to carry "arcs" will be established across the air gaps; it means that the distance at which an arc could be maintained at the normal current and pressure is half the air gap. This method of rating agrees very closely with that adopted by the Glasgow Corporation for use on their 250-volt circuit, and it is satisfactory to find that a scientific basis for rating switches has been discovered. The paper is well illustrated with curves showing the lengths of the sparks got by breaking circuits carrying currents up to 100 ampères, and at pressures up to 600 volts. The experimental data given will be most useful to manufacturers, and if more papers of this type were published we should hear less about the lack of uniformity in supply company and Corporation rules.

Royal Courts of Justice.

WE are informed that the Board of Works is now engaged on the work of installing the electric light in the chambers of the Courts of Justice. It is surprising that this work has not been undertaken before, but we hope that the fact that it is now in hand is an augury that other necessary work will not be neglected. It is high time that the passages throughout the building were warmed by hot air; one would also suppose that hot water might be supplied in the counsels' lavatories. Nothing has yet been done to improve the ventilation of the Court passages, nor to affix outside the doors leading to the Chancery and other

chambers any indication of the way to reach them. It is really surprising that so many small but necessary improvements, the aggregate cost of which could not amount to more than a few thousand pounds, have been so long left undone.

Architectural Association Day Classes.

WE have received a copy of the programme for 1902-3 of the Day Courses in architectural training at the Architectural Association, for which, as our readers will remember, Mr. A. T. Bolton is the Master. These were instituted with the object of giving to young men who are thinking of adopting the profession of architecture some special preliminary training before they actually enter an architect's office; it being considered that pupils are often unable to take advantage of the opportunities afforded in an architect's office because they have not previously studied the elements of their work; and a year or two spent in the kind of preliminary school now established at the Architectural Association will enable them to acquire, at a moderate cost, the rudiments of their work. The two main subjects taught are the history of architecture, and elementary knowledge of construction and materials; thirty-six lectures on each subject. The lectures on construction are illustrated by visits to workshops and buildings in progress. The course is for two years, and the student who distinguishes himself most in the first-year course will be given a free pass to the second-year's course; so that this arrangement forms an annual prize or exhibition for the first-year students. Mr. Bolton is, we think, an ideal instructor for such a school, as he combines artistic feeling with a great deal of practical and historical knowledge. He undertakes, moreover, to give (by appointment) an interview to each intending student who has entered his name on the books. This is a valuable concession, as the master learns the special wants or acquirements of the student, and may be able to give him advice useful to his special case. Full particulars of the classes can, of course, be obtained from the secretary to the Architectural Association.

National Competition Drawings, South Kensington.

THE exhibition of the selected works of schools of Science and Art and Art classes which have been rewarded with prizes is held this year in the upper gallery of the India Museum, in Imperial Institute-road. This position is a great improvement on the arrangements of past years, which have often left much to be desired, both for lighting and facility of access. With the abstention or the exclusion of the Royal College of Art, the Glasgow and other schools, the exhibition really retains little of a national character, and is considerably beneath the average of past exhibitions in quality and quantity. We should have particularly liked to see the work in architecture of the Royal College, under the influence and training of Professors Beresford Pite and Lethaby. The architectural work from the provincial schools maintains its usual characteristic of amateurism, where either measured work of elaboration or advanced design is concerned. There are a good many sets of designs that have been exhibited on the walls at the Institute, amongst them the design of Mr. Gascoyne, of Nottingham, which won the Tite prize this year, and is now rewarded with a silver medal. It is not in the architectural section that the best work is to be found. Figure decoration applied to architecture is well represented by Miss Annie McLeish, of Liverpool, with designs for decorating a dining-room. Several friezes are noticeable, one by Mr. William Chase, of Regent-street Polytechnic, of the Canterbury pilgrims, is deserving of the award it receives. Of applied designs from Nature, that by Mr. Harold Whitaker, of Bradford, is far away the best we have seen. Miss Elizabeth Thorpe, of Huddersfield, sends a design for a jewel case, which is a delightful conception. Amongst the book illustrations is a sheet of life studies by Mr. Gilbert Rogers, of Liverpool, treated in stencil of two or three tints, which are admirable for the effects obtained both of light and shade and modelling. Miss Eugenie Richards' illustrations for nursery rhymes are possibly the best thing in the exhibition; their grouping, humour, colour, and drawing are all that could be desired.

New Inn, Wych-street.

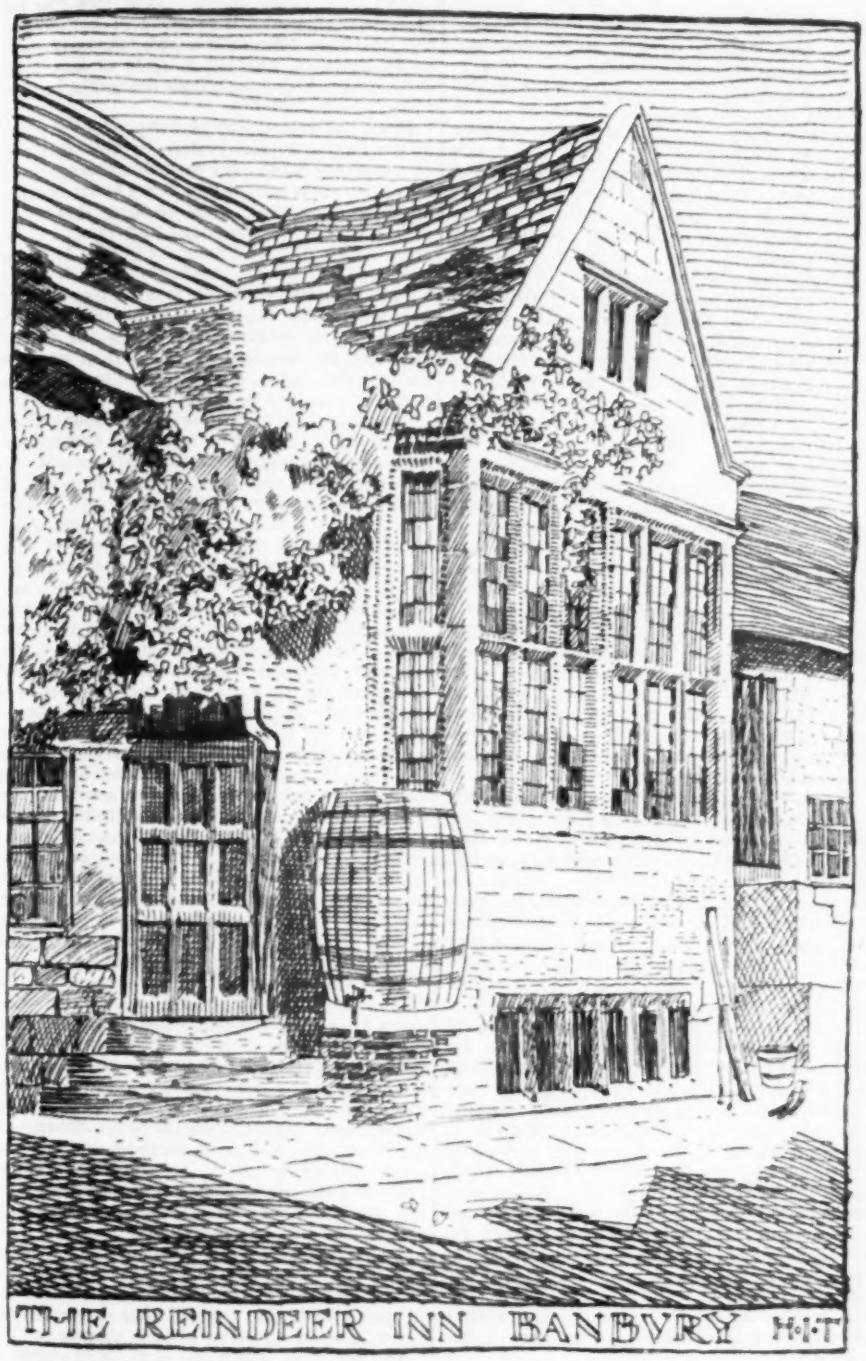
ON Friday last week were sold at auction the materials of the greater portion of New Inn, which will be speedily demolished for the improvements in that quarter. We gather that the twenty "Ancients" of the Inn, being lessees for a further term of 300 years from the Society of the Middle Temple, the freeholders, have disposed of their proprietary rights for 157,000*l.*, to be vested in representatives of the "Ancients" and the Middle Temple as trustees in that behalf. Of New Inn as a place of legal instruction the annals are very meagre. Five hundred years ago its site was that of a travellers' hostelry, commonly known as the Inn of Our Lady, having the Virgin Mary for its sign. Stow tells us that Sir John Fineux, Chief Justice of the King's Bench, bought or hired Our Lady's Inn for 6*l.* per annum, *temp.* Edward IV., for law students, who then lodged in a house called St. George's Inn, by Seacoal-lane, in Little Old Bailey. The students, one of whom had been Sir Thomas More before he migrated to Lincoln's-inn, were afterwards joined by others dispossessed by the demolition of Strand, also known as Chester, Inn, for the Lord Protector Somerset's palace by the riverside. St. George's Inn had been reputedly the oldest Inn of Chancery in London, its successor subsequently became attached to the Middle Temple, and after the demolition of Strand Inn remained as the only law seminary belonging to that Society. Over the Hall, and in the older portions of the present buildings along the north side of Wych-street, are some curious sets of chambers after a kind that will not be built again, and in various rooms are some old panelling, mantel-pieces, and other carved fittings; but for some while past, in view of its impending fate, the buildings of the Inn have not been maintained in a state of repair. The Hall and its garden stand at the upper end of the court named Danes Inn, erected in 1854-5 on the site of the Angel Inn, whence Bishop Hooper was carried in 1555 to be burned at Gloucester, and shortly to be pulled down in its turn. On Tuesday last Mr. Justice Farwell formally approved a scheme whereby out of the above-named purchase-money a sum of 26,000*l.* is apportioned to the "Ancients" as renters for life, and a sum of 55,000*l.* to the trustees for public charitable uses, the Court having decided that the property in New Inn is a charitable trust.

THE ARCHITECTURAL ASSOCIATION ANNUAL EXCURSION.

AFTER an interval of seventeen years Banbury has again been chosen as the headquarters of the Architectural Association's annual Excursion. This year, however, several places were included in the programme for the Excursion that were not visited on the last occasion. About a dozen members, including the President and the two Excursion Secretaries, travelled down on Saturday afternoon by the train leaving Paddington Station at 3.15, arriving at Banbury in time for a substantial dinner at the Red Lion Hotel: more members arrived during the evening, and on Sunday, from far and near; so by Monday morning the party was practically complete, the number this year having been restricted to thirty. On Sunday the usual informal programme was followed, the morning being spent quietly in strolling round the old streets of Banbury, and in the afternoon an impromptu excursion was made to Edge Hill, from the top of which a magnificent panorama may be seen with the river Avon stretching far away to right and left; on the way an hour was spent in the interesting village of Warmington, where the church and manor-house were much appreciated; in the churchyard are several very quaint headstones.

Ecclesiastical and domestic architecture were about equally represented on the programme laid before the members, the former included such interesting examples of churches as Adderbury, King's Sutton, and Bloxham, whilst among the latter were at least four old houses of great architectural interest: Broughton Castle, long the home of the Saye and Sele family; Wroxton Abbey, for years associated with the name of North; Compton Winiates, the charming Tudor house of Lord Northampton and Canons Ashby, for so long the home of an old friend of the Architectural Association, Sir Henry Dryden, now also gone to his rest.

The town of Banbury, known to history no less for its cakes and ales than for the cross celebrated in nursery rhyme, is, as the local guide says, one of the cleanest and brightest towns in Oxfordshire, and possesses what is an absolute necessity for an Architectural Association tour, a really good hotel, the Red Lion. There are many very interesting old houses, not a few very "sketchable" subjects for an architect's note-book. Almost opposite the headquarters is an interesting old house, overlooking the narrow street, with three high-pitched gables, with much-ornamented barge boards, perhaps rather coarse in detail; below are bold semicircular bay windows, with pargeted walls. Unfortunately, the roof is now covered with blue slates instead of the old stone slates of the district. The Rectory House, built of a rich brown-coloured stone, with mullioned windows, adjoins the church, which was commenced in 1793 from the designs of Robert Cockerill; it replaced a much older Gothic building, which, if local tradition be reliable, must indeed have been an elaborate structure. Not far from the church is the Banbury Cross. The original cross was destroyed in the year 1602 by ruthless Puritan vandals, and the present structure, which can hardly be said to be a fine architectural composition, is of comparatively modern date. There are some interesting inns to be seen; amongst them The Swan Inn, an old stone building nearly opposite the cross, and The Reindeer, with its quaint sign projecting halfway across the street, beneath which are the oak doors, dated 1571, giving access to the old-fashioned stable yard, wherein generations of farmers from all the countryside round have been wont to "put up" on market days. A very fine Jacobean room overlooks the yard, from which it is entered by a flight of steps. It is panelled throughout in oak, now black with age, and is in a very fair state of preservation; here and there pieces of moulding are broken away; the fireplace has been modernised, but the overmantel, which is quite a fine specimen, still remains. The room is not of large dimensions and has a well-modelled ceiling with broad ribs ornamented with running patterns, the spaces between filled with little figure subjects that appear to have been formerly gilt; it is in



all probability the work of travelling Italian plasterers, and is in some respects similar to one at Compton Winiates, not many miles away. A plaster cast of this ceiling has recently been placed in the South Kensington Museum. On one side of the room is a large bay window, on either side of which are angle doors, which, together with the panelling and the fireplace, are remarkable for their good details and delicate workmanship.

On Monday morning the weather looked far from hopeful, but fortunately rain kept off, and at nine o'clock a start was made for Adderbury, where the church, dedicated to St. Mary, was visited. It consists of a chancel 40 ft. by 20 ft., transepts 71 ft. across, nave 61 ft., including the aisles, and 71 ft. long. It has also a western tower, with spire and north and south porches. The open timber roof over the nave is of very pleasing character. It consists of ten principals, and is about 19 ft. span. The principal rafters and struts are shaped in ogee form. The curved parts beneath the tie beams of the four principals nearest the east end have cusped enrichments, adding considerably to their appearance. The chancel is said to have been built by William of Wykeham, who in 1385 gave this vicarage to New College, Oxford. His bust is sculptured with his armorial bearings on the external wall over the east window of the chancel. Dividing the north and south aisles from the transepts are two very interesting square moulded pillars, with sculptured caps, that to the north aisle having female faces and that to the south aisle male faces, with foliage ornamentation.

The building is of various dates; the tower and spire and nave are of the Decorated period, and there are many remarkably fine specimens of mediæval sculpture, which called forth the admiration of Sedding, who read a paper here at the Architectural Association visit in 1885. He said: "I doubt whether, through all the range of English carving, there is anything better in its way than this. The capital to the north transept has busts of women with grave, beautiful faces, evidently studies from life. That to the south transepts is re-chiselled and spoilt. Such carving at this shows us that the old carver could both jest and pray; he knew how to mix things human and divine as they ought to be mixed upon the wall of that building which is the trysting-place of God and man; he could express his faith, and tell of man's relation to the court and company of heaven, and yet give his art local flavour and a spice of humour by inserting current village jests and contemporary portraiture." There is a fine rood-loft with attached staircase. The window tracery was cut out in 1790 to save the cost of repair, and its place filled with stone bars. On the south side of the altar is a fine sedilia and piscina. On the north side of the chancel is an original vestry, with a room over, now used as an organ-loft; it has an oriel window. This building is known as the "monument house," probably a corruption of muniment. There is a fine brass of a knight and lady, about 1460, in good preservation.

The church has undergone several restorations—in 1834 by Buckler, in 1870 by Sir Gilbert Scott, who inserted windows in the aisles and added a coved canopy to the chancel screen, and later by Mr. John Oldrid Scott. On the north side of the church is the old parsonage house, which still bears much of its original character.

After leaving Adderbury, a drive of a few miles brought the party to Deddington, where once there existed a castle of some importance. The church is dedicated to St. Peter and St. Paul, has a very wide nave and a fine fourteenth-century screen dividing it from the chancel. On the outer walls of the north and south aisles are the remains of staircases, in the thickness of the wall, which formerly led to rood lofts in the aisles, separating them from chapels.

The roof of the north porch is a flat, dome-like shape of Gothic tracery. In 1634 the tower fell, carrying away part of the church, and the bells were damaged. King Charles, who was then at Oxford, hearing of the mishap, thought it a pity that such good metal should be wasted. He therefore addressed an order to the parson, churchwardens, constables, and others, requesting that the bells be sent "to our magazine here in New College, at the same time promising to either return the bells or send a contribution to the church, but neither promise was fulfilled. When the tower was rebuilt, the builders made very sure that no such calamity should again overtake their tower, and built massive buttresses and very thick walls. The curious mixture of Gothic and Classic detail shows the feeling of the time.

The Manor House on the north side of the churchyard is a picturesque building of yellow Hornton stone, with bands of a grey stone from Bruckley in Northants. On the garden side is a large bay window running the whole height of the house, which is dated 1654. In the centre of the building is a tower, round three sides of which runs a balustrade. In the interior is a fine staircase with double newels and open carved pendants, well-proportioned balusters, and carved strings. Inside are several well-proportioned rooms. The house has recently been restored. Here the party were very hospitably entertained to luncheon, and, after a hearty vote of thanks to the owner for his kindness, a start was made for Somerton.

A drive of about three miles past North Aston Church and park, and across the river Cherwell, brought the party to Somerton Church, situated on rising ground. The church consists of a nave, north and south aisles, chancel, south chapel, and tower. The nave is 52 ft. and the chancel 33 ft. in length. There is much interesting modern work in the interior, by Sedding & Wilson.

On the south side of the church is the burial-place of the Fermor family, and several memorials to them exist. The oldest is to the memory of William Fermor, who was lord of the town and patron of the church and a prominent lawyer during the reigns of Henry VII. and Henry VIII. He died September 20, 1552.

On the north side of the tower is a representation of the Crucifixion, with our Lord between the two thieves. Over the communion-table is a rudely-sculptured representation in stone of our Lord, seated, surrounded by the apostles. In the churchyard on the south side of the church is a fine crucifix, raised on stone steps.

The time at the disposal of the party proved far too short, and it required more than one call from the secretary's whistle before another start was made. Such a church as this, and also the one at Warmington, would prove a good subject for illustration by a monograph.

Rather more than a mile from Somerton is Fritwell, where the party were entertained to tea by Mr. Garner. This visit was the most interesting of the day, and the Association were fortunate in having so enthusiastic a guide. The house is of a type not unusual in the early seventeenth century; the entrance front has projecting wings, and a central porch with quaint little balustrades on either side, very similar to St. Catherine's Court, near Bath. The interior of the house is delightful in every way, in fact, quite an ideal architect's home, with very many fine examples of furniture. The garden, too, with its formal beds and yew hedges, is an ideal frame to the grey old manor house.

From Fritwell a drive of about five miles

brought the members to Kings Sutton, where the church and manor house claimed attention. The church, which is celebrated for its very fine tower and steeple, was restored by Sir Gilbert Scott. The tower is placed in an unusual position, its western face being flush with the ends of the aisles, with a porch extending beyond of sixteenth century date. The two pinnacles at each corner of the spire, where the tower springs, are interesting features. They are connected by small flying buttresses with the main structure. The party left Kings Sutton after a stay of rather more than an hour, reaching Banbury soon after seven o'clock.

Tuesday morning was inclined to be wet, and the train was taken to Woodford Station on the Great Central Railway, and after a drive of about an hour in the rain the party reached Fawsley Hall, where they were met by Lady Knightley, who very kindly acted as guide to the Hall and church. The Hall stands in a well-wooded park, improved by Capability Brown with two artificial lakes.

At the time of the Domesday survey, the lordship of Fawsley was held by the Crown, and later the families of Russell, Capes, and Fawsley possessed it, until in 1415 it was bought by Richard Knightly, whose descendants have ever since retained it. Some parts of the house date from this period. The great hall, of early sixteenth century date, has a very fine fireplace and a large oriel window, the upper part of which is a secret chamber with no means of access other than by a ladder. It is supposed that in this chamber were printed the anonymous pamphlets known as the Martin Marprelate tracts, which appeared in 1588 in support of the Puritans, and for which Sir R. Knightley suffered so severely. The printer was one Waldegrave, who first set up his press at Moulsey in Surrey, then at Fawsley, and later at Norton, another seat of the Knightleys, who always supported the Puritan cause. Before the outbreak of the Civil War, many conferences took place at Fawsley Hall between the leaders of the Parliament.

Fawsley Church consists of a nave about 50 ft. by 21 ft., chancel 17 ft. by 21 ft., and north and south aisles. It contains many interesting monuments, and, indeed, is quite a history of monumental architecture in itself. On the south side of the nave, next the chancel arch, is a very fine alabaster tomb enriched with colour decoration. It is to Sir Richard Knightley, who died in 1534, and his wife, Joanna Skrierton. The knight is in full armour. After visiting the church, luncheon was taken in the riding school, and before leaving Fawsley Park a visit was paid to a very interesting early Tudor building known as the Dower House, dating from the early sixteenth century. It is now a ruin, not having been occupied since 1704.

From Fawsley the party drove to the *pièce de résistance* of the day, Canons Ashby. Canons Ashby is so called from a priory of Augustinian canons which existed here as early as the reign of Henry II. After the dissolution the possessions of the priory were granted to a Sir Francis Bryan, about the same time as the earliest Dryden came hither from Cumberland. From Sir Francis Bryan the property passed to the Cope family, who converted the domestic buildings of the priory into their home. A daughter of the Copes married John Dryden, who had already built himself a house not far off, and as years went by the Copes died out, and the whole place came into the hands of the Dryden family. The original parts of the house were put up between 1550 and 1574. Between 1708 and 1710 great alterations were made to the old house, and since this date nothing has been done. The house is arranged round a picturesque central courtyard, to which admittance is gained through a low archway past the old brew-house. On the east side are the offices, consisting of kitchen, bakehouse, and laundry. The entrance door is on the north side up a flight of steps, and leads directly into an oblong, stone-paved hall, with walls decorated with old armour trophy. On the west side of the hall are the principal apartments, overlooking the delightful old garden; the dining-room and library on the ground floor, and the drawing-room above. The dining-room is panelled throughout, it is said, from the wood of one oak. The drawing-room on the first floor is not a very large apartment, measuring 25 ft. by 18 ft. It has a coved ceiling springing from each of the four sides, richly modelled and ornamented with ribs, which meeting, form a curious pendant in the centre of the room. One compartment is richly coloured with the arms of Sir John Dryden and his wife, whom he had married in 1632, and the ceiling probably dates from about this time. The fireplace is pleasing, with three pairs of little Corinthian columns of better design than one usually meets with in these early days of the Renaissance. The house also contains a fine collection of old furniture, some good old armour, and many interesting pictures and portraits, including one of the poet, "Glorious John," who frequently came here to court his cousin, the daughter of the reigning baronet.

The chief glory about Canons Ashby is that it retains so much of its old-world character. This is no doubt due to the conservative care of its late owner and the present Baronet, who has done necessary works of reparation. The garden, too, retains its old character, and has for two centuries successfully withstood the changes in garden fashion; it is therefore a rather valuable example, and deserves more than a passing reference. It consists principally of a green court enclosed with walls on the north-west side of the house, which lead up to the original entrance on this side, now no longer in use. This court, which is entirely laid down with grass, although remains of a drive may be traced, has eight cut yews leading to the front door, on either side of which are very handsome Georgian lead rain-water heads. At the opposite end of the green court are some very good gate and angle piers, about 11 ft. high, terminated in obelisks supported on groups of scrolls, forming an original and suggestive design.

The remaining gardens slope away gradually on the south-west side of the house; they are enclosed with old lichen-covered walls, with masses of brilliant old-fashioned flowers and well-kept grass walks between. Near the house is a group of four old cedars, between which a delightful vista is obtained, through the garden, past the sundial, and down a long avenue in the park. No wonder, then, that the members of the Architectural Association waxed enthusiastic, and the three and a half hours proved far too short to exhaust the glories of the old house, and left little time to examine the thirteenth century church which is all that now remains of the Augustinian priory, and even this is reduced to one-sixth its former extent; the west front is an interesting mixture of early and late work, the lower part consisting of a beautifully moulded Early English arcade and door; above it is a large Perpendicular window; two bays only of the nave arcade are now standing, the other three bays were cut off at the time of the Reformation, when the large bay window was inserted and the present flat roof introduced. On the homeward journey Thorpe Mandeville Church was visited, and Banbury was reached soon after seven o'clock.

COMPULSORY REGISTRATION OF TITLE TO LAND.

A VOLUMINOUS, but clearly expressed, Report on the working and results of the application of the system of compulsory registration of title to land, in London, has been presented to Parliament and is of great interest to all landowners and to all professions concerned in transactions affecting landed property.

The Registrar, in addition to reporting on the results obtained, gives a brief description of the method by which the work is carried on, and also some general directions as to the procedure. The Report should therefore be carefully studied. The figures given are instructive; land to the value of about 35,000,000*l.* has been dealt with, the transactions numbering 54,000; and when one bears in mind these figures and the fact that the indemnity fund has not been called into action, and further that only one appeal from the Registrar's decision has been made (and in that case the Registrar was upheld), it is apparent that the system must be a good one, and that it has been skilfully applied.

One fact is specially worthy of notice, namely, that the cost has been entirely borne by the fees, no charge whatever being made upon the public exchequer, and in connexion with this it is stated that a great deal of surveying has been done in bringing the Ordnance Map up to date, the expenditure on which, no doubt, might very properly have been considered as provision for the future, and therefore treated as of deferred benefit and the cost spread over some years. That this has not been necessary affords grounds of congratulation to those officials who, by reason of their skilful forecast, enabled a scale of fees to be determined, which, although moderate, has resulted so satisfactorily.

From the description of the procedure given by the Registrar, the system would appear to be simplicity itself. He says that the applicant for registration has only to bring to the registry his title deed and then do four things—(1) visit the Map Department and point out his property on the Ordnance map; (2) have the proposed entries in the register drafted (and we are pleased to observe that these entries are not arbitrarily drawn up by officials, but, before being settled, are submitted to the applicant for his approval); (3) next he pays the fee, and, lastly, leaves the document in the proper room, and the transaction is complete.

The Registrar says that half an hour suffices to carry this out, and that the land certificate is despatched in from a week to a fortnight, and we think no one would feel disposed to grumble if the time occupied was longer; when one contrasts it with the wearisome delay usually entailed by the old system of conveyancing, the time occupied appears trifling.

The delay that does sometimes occur, and which has been severely commented on by some legal critics, is solely caused, so the Registrar says, "by the discovery of some serious discrepancy between the description of the land contained in the deed and the actual state of the property as shown on the ordnance map." If this be so, then the fault must rest with the legal expert who drew the deed, and we endorse the Registrar's remarks that "the majority of landowners appear to take the sensible view that a clear and accurate description of the property of which they are in occupation and to which they believe themselves to be entitled is an advantage which they seldom obtain under the present conveyancing system, but which, if the new system can give it to them, is well worth procuring even at the cost of a little trouble and time at the outset."

The Registrar proceeds to emphasise this part of the Report by stating "sometimes the claim (based on the deed) embraces *more* land than has been conveyed, sometimes less," "sometimes the position and shape of the boundary walls and fences are different to those shown by the plan attached to the lease or conveyance," "sometimes when the dimensions are correct the angles are wrong and overlap neighbouring property," and, finally, "sometimes the description has been copied from an old deed *and has no relation to the existing state of the property at all*"!

In Appendix III. the Registrar illustrates a few of the causes of delay, and if it were not an official Report one would feel justified in doubting that the present day conveyancing practice could be guilty of such errors.

In the first example the deed gave a plot of land 40 ft. wide in front and 43 ft. at rear, but what the purchaser really was entitled to appears to have been only 30 ft. in front and 20 ft. at the rear.

In Example 3 the deed omitted about one-sixth part of the land.

Examples 4 and 5, from the illustrations given, border on the ludicrous, the plans on the deeds having little or no resemblance to the actual properties.

Example 6 is of a deed which the Registrar labels as of "land described and identified *forming no part of the land intended to be conveyed*"!

With such instances occurring in the daily practice, the Registrar must have felt serenely indifferent to the criticisms which have from time to time appeared in our legal contemporaries.

Dealing generally with the effect of the Acts upon the question of title to land, the Registrar admits that a possessory title is not a good thing or of much practical benefit until it has aged, and therefore he advocates that the acquisition of an absolute title should be made easier and less expensive than at present, for, as he says, "If the titles now being registered could be all entered as absolute titles there would be no possible question as to the benefit to the public that would at once accrue as a result."

The Registrar propounds three methods by which absolute titles should become the rule, but as he himself dismisses the first two as being in some respects unsuitable to this country, and also entailing further legislation, and we are disposed to agree with him, it is

only necessary to consider the third alternative.

Briefly described, what the Registrar suggests is (by alteration of the rules only) to give him the power to grant an absolute title when four conditions have been complied with, namely :—

1. Sale under ordinary conditions, completed by entry into possession.

2. Possessory title registered for upwards of two years.

3. Applicant's production of and deposit in the registry for a substantial period of such documents of title as he ought to possess.

4. Public advertisement.

As this part of the subject is of engrossing interest and of far-reaching effect on all landed property, the Registrar's proposals should be fully considered and discussed in professional circles, and as some assistance we would direct attention to the following points :—

As regards condition 1, the Registrar remarks that "where a purchase has been bonâ fide completed in the usual way and the purchaser has entered into possession or receipt of the rents and has remained undisturbed for a year or more, the occurrence of actual loss or trouble of any kind arising out of the anterior title is practically a thing unknown or unheard of."

This appears to be a sound argument, for it is difficult to conceive a case where a property could be sold and possession held or the rents actually received for a year or two by the purchaser, without the true owner's knowledge.

Again, the Registrar says "the commonest form of fraud is by duplication of a recent deed," and it is just this kind of fraud which the registry practically renders impossible and against which the old system of conveyancing affords hardly any protection.

Condition 2 is supported by the Registrar by the statement that as practically all possessory titles have been immediately preceded by a purchase, there has consequently been some (more or less strict) examination of title on behalf of the purchaser.

The production and retention in the registry, as per Condition 3, of the applicants' title deeds, would be useful as placing obstacles in the way of any unregistered dealings subsequent to the registration, and would be no hardship to the applicant who could not want them unless to carry out some dealing which should, *per se*, be notified to or carried out at the registry; the few exceptional cases in which the deeds were otherwise required could easily be provided for.

The last condition, namely, that of public advertisement, would be a further check on fraud and also a safeguard as to disputed rights of ownership, and we should hardly suppose that an owner would object to the fact being advertised that he had applied for an absolute title to certain property (no other facts being disclosed), and we venture to think that it could result in no detriment to the property and certainly none to the applicant.

The Registrar points out that naturally the registry has collected and will continue to accumulate much general information about titles which render it possible to eliminate the elements of fraud and mistake; in other words, the Registrar by virtue of his official knowledge of Smith's title knows a good deal about Jones' title, and, although, of course, he would not disclose his knowledge to either Smith or Jones, he can act upon it.

This leads us to another paragraph of the Report, which, although preceding the foregoing, will be more readily understood by dealing with it as following those observations.

The Registrar explains that an absolute title means that the registered proprietor can dispose of his land without delay, without cost, and without trouble, also that the purchaser can acquire it likewise without delay, without risk, and with no more trouble than is involved in reading a few plain entries in a book and in filling up a short printed form of transfer for the vendor to sign, and with no more cost than the registry fees, which the Registrar generalises as being *only one-fifth* of the usual legal charges.

We may mention that the actual fee on a transfer is 6*s.* per 100*l.* up to 1,000*l.*, 4*s.* per 100*l.* for next 2,000*l.*, 2*s.* per 100*l.* for next 7,000*l.*, and 1*s.* per 100*l.* for remainder up to 32,000*l.*, when the maximum fee, 25*l.*, is reached, and these fees are, of course, payable by the purchaser only; the vendor pays nothing whatever.

The Registrar contends that only an absolute registered title can enable an ordinary landowner to deal with his land himself, and with the same freedom and facility and entire absence of cost and delay as that which attends his similar dealings with goods or stocks and shares, and that it is only an absolute title that can be accepted by a purchaser or mortgagee on his own responsibility without recourse to legal assistance. We are prepared to agree with him that if attainable these are solid advantages to the community at large which are worth a certain amount of general effort and even cost.

Trammelled as we are by our experience of what usually happens when one sells one's farm or one's house, it is difficult to imagine it to be possible that it *can* be effected by merely reading the entries in a book and filling up a form, and yet, as the Registrar very appositely points out, that is how real estate is conveyed in our Australasian and other colonies and in the German and Austro-Hungarian Empires.

The Report also emphasises the facility with which a permament mortgage or temporary loan can be effected by means of the register, and the Registrar makes the noteworthy statement that "London bankers who have had experience of the registry system are already beginning to express their preference for it." This is a substantial argument in favour of registration from a class of the community whose opinion is specially valuable.

The Registrar proceeds to make some trenchant comments on the reason why, in his opinion, landowners have not more freely applied for absolute titles, and, in fact, have made so comparatively little use personally of the registry.

He says (1) that landowners, as a rule, do not know that such personal applications can be made at all, and that he doubts whether, of 30,000 persons registered as proprietors of land in London, more than a small fraction of them are aware of the fact, or, indeed, even of the existence of the land registry system at all, and he gives the following as his reason. As the reason given is, to say the least, a grave reflection on the method adopted by some members of the legal profession to subvert the intention of the Act, we will quote his own words :—"The entry of a purchaser's title on the register is now one of the regular consequences of a sale, and it is concluded by the solicitor without any necessary communication with the client in regard to it, and, unless something leads the client to make special inquiry about it, the probability is that the land certificate is merely put away with the other title-deeds in a safe, and no further thought is given to the matter."

The obvious inference of this statement is that the Registrar thinks that some solicitors have, if not actively, at any rate, passively, concealed from their clients the fact of the system of registration being in existence: we hope this is not generally the case, as although, no doubt, the system hits the solicitor a hard blow, yet we should be reluctant to think he would adopt such means to controvert its efficiency.

But that the Registrar is in earnest in this statement is shown by the paragraph which follows, in which he says, "the first thing to be done is to place before the landowners themselves information as to the object and purpose of the Acts, and especially as to registration with an absolute title, how it can be obtained, the probable cost and such other particulars as may be deemed advisable."

Again, in the last paragraph the Registrar is evidently girding at his legal critics when he says, "With regard to the supposed disposition of the Land Registry to discover technical flaws in a good holding title, and so render the application abortive, it will at once be seen that the regulations leave very little room for that kind of activity. Further, it may be stated with some confidence that no such disposition exists. There does not appear to be a single case of a title which had been the subject of a bonâ-fide sale within recent times having been refused registration as absolute. A certain number of applications have been refused, but they have usually been cases in which the owners were aware that they would have trouble if they attempted to sell in the ordinary way, and hoped that the Land Registry might be able in some manner to cure the mischief."

In the sub-Report submitted by the Director of the Survey and Map Department, there are two paragraphs which are of special interest to our readers who belong to the profession of surveyors. The Director says: "Men of the surveyor and reviser class were especially difficult to find, the fact being that a thoroughly good surveyor and draughtsman is sure of employment, and at a high rate of pay," and "considerable difficulty was experienced in obtaining suitable men, owing to the low commencing rates of pay and limited prospects of advancement offered."

We need hardly say that we are glad to read both of these statements by the Director, as it is at once a recognition of the status of the profession, and, at the same time, a condemnation of the Committee who fixed those low rates of pay and limited opportunities of advancement.

Evidently those gentlemen had little or no knowledge of what it costs to learn to be a surveyor, or of what his, the surveyor's, knowledge consists.

We are struck by the information given in the Report as to the relative rates of pay of the officials of the Survey and Map Department and those of their legal brethren. For instance, the Registrar states that an Assistant Registrar (of the legal department) is paid 825*l.* per annum and a Chief Superintendent (of the Survey Department) only 356*l.* per annum, although each holds the same relative rank in his respective department; and the Registrar, in describing the duties of a Chief Superintendent, says he is responsible for the clearing up of all doubts and difficulties (excepting questions of law).

As the Registrar in another part of the Report refers to "the onerous and responsible duties" of the Survey Department, and, as we have already pointed out, gives examples of the serious discrepancies between the deed plan and the actual pressures which frequently occur, and also admits that "questions arise more frequently as regards the plan than as regards the legal features of the case," it would appear desirable that there should be an inquiry by experts into the rates of pay of the officials of the Survey Department; for although we have only instanced one class, the same disproportion and inadequacy appears to be the rule throughout the department. We do not advocate extravagant salaries for officials, bnt when the exercise of skill and judgment is required the truest economy is to pay the official adequately, and then to insist on personal responsibility and efficiency.

It will be seen by the above comparison that there is a most marked disproportion between the rates of pay of the two classes of officials, especially when it is obvious that in a system of registration the plan plays by far the most important part. And, in fact, the Act itself states this, for it provides that, in case of dispute between the verbal description and the plan, the plan is to prevail; consequently, the responsibility of the officials of the Survey and Map Department must be at least equal to that of those of the Legal Department.

When it is borne in mind that the system has worked for three years under all the adverse circumstances attaching to an innovation and amidst all the complications of this busy metropolis, and has, by the report of the Registrar, worked so smoothly and satisfactorily, it becomes a question whether it would not be desirable to extend the principle as rapidly as possible to the provinces and, therefore, it is perhaps to be regretted that the provisions of the Act of 1897 render the consent of the Council of each county essential before the system can be applied in any particular county.

Obviously, the subject being primarily a legal one, the ordinary councillor is very apt to refrain from giving it much personal consideration, being content to be guided in such a matter by the opinion of the Clerk of the Council, and as that gentleman is necessarily a member of the legal profession, it is perhaps expecting too much to hope that he will be very enthusiastically in favour of a project which interferes with the privileges of his class.

Before the assent of a County Council be asked it would, perhaps, be as well to afford the councillors (and the electorate) information on the subject; a few lectures in the principal towns would be effective and, if discussion was allowed, very instructive.

We have entered somewhat fully into the matter, as we feel that, in their own interests, all landowners, land agents, surveyors, auctioneers, and others concerned in dealings with land should give the subject of registration of title their earnest consideration; manifestly it will, if it becomes general, very materially affect them.

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

A NOTE FROM ITALY.

PROFESSOR GIOVANNI PATRONI, having had the opportunity of making some excavations near the celebrated "Certosa di Padula" (Sorrentum), in the spot occupied in ancient times by the town of "Consilinum," has found the remains of a large building of public character.

This large rectangular building has been destroyed almost to the foundations, the materials having been employed in the construction of the neighbouring mediæval "Certosa." Happily some very important architectural fragments have been saved from the general wreck. It has been possible to recover sixteen drums of fluted columns of 74 centimetres in diameter, with the central hole intended for their bronze dowels, many still showing some of the lead that kept them in their places. There has been found also a fragment of a small frieze with metopes and triglyphs, some broken half-columns also fluted, some capitals with figures, and two draped headless statues, all made from the calcareous stone found in the neighbourhood. The half-columns stand as a proof that the edifice had a portico, in which an inside half-column corresponded to the exterior column.

In one of the capitals we have a head of young Herakles, covered with a lion's skin (fig. 1); in another we see a head of a Menad, with wine-grapes hanging about her neck (fig. 2); a third shows a feminine head (another Menad, perhaps), with dishevelled hair; the fourth capital is very important, with its bust of young Pan (fig. 3); a Gorgon head, with snakes round her neck (fig. 4). These capitals are of good workmanship, both in the figures and the leaves.

Two statues were also found with the architectural fragments; they are life-size, and probably represented some magistrates. These sculptures somewhat resemble the Æschines of the Museum of Naples, with the arms characteristically draped in the mantle and crossed on the breast.

Professor Patroni thinks that the edifice of which the remains have been discovered was a sanctuary erected outside the city of Consilinum, of which the traditions were continued by the Christian worship (Certosa di Padula). It was probably a temple sacred to Bacchus, as the emblems of that divinity are predominant in the heads which adorn the capitals.

L. B.

ST. STEPHEN CHURCH, HAMPSTEAD.—It is announced that the Reverend J. Kirkman, Vicar, will present a stained-glass window, to be executed by Messrs. Lavers & Westlake, as a thanksgiving offering in respect of his long term of ministration, he having been appointed to the vicarage thirty-two years ago. The church was consecrated on December 31, 1869, having been built at Hampstead Green after S. Sandars Teulon's plans and designs.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS:

THE MIDSUMMER EXAMINATIONS.

Preliminary.—The Preliminary Examination, qualifying for registration as Probationer R.I.B.A., was held in London and the various non-Metropolitan centres indicated below on the 10th and 11th ult. Of the 207 candidates admitted, forty, having furnished satisfactory evidence of their attainments, were exempted from sitting. The remaining 167 sat for the examination, with the following results:—

	Passed.		Relegated.		Total.
London	67	...	20	...	87
Birmingham ...	8	...	—	...	8
Bristol	9	...	—	...	9
Exeter	5	...	—	...	5
Leeds	15	...	2	...	17
Manchester	24	...	3	...	27
Glasgow	4	...	1	...	5
Newcastle	8	...	1	...	9
	140		27		167

The passed candidates, with those exempted—numbering altogether 180—have been registered as Probationers. The following are their names:—

H. E. Adams, Brixton, S.W.; D. M. Addis, Edinburgh; J. Allner, Manchester; J. E. Bailey, Bushy Heath, Herts; D. Bamford, Manchester; T. M.

Banks, Darlington; R. F. Bargman, Dorking; W. J. Barnsley, Walsall; J. Baxendale, Bolton; H. A. Beeston, Dover; G. A. Bell, Leicester; O. P. Bevan, Bridgend, Glam.; W. G. Blakey, Sunderland; H. Booth, Leeds; G. P. Boyd, Berwick-on-Tweed; J. Boyd, Longsight, Oldham; T. A. D'Arcy Braddell, Ealing, W.; A. V. Bramble, Emsworth, Hants; P. S. Brenton, Combe Park, Weston, Bath; G. B. Bridgman, London; W. J. Brough, Finsbury Park, N.; E. M. Browett, Wolverhampton; E. O. Brown, Christchurch; J. C. Bucknill, B.A., London; R. G. Burrow, O'd Trafford, Manchester; J. S. Cable, Brixton; G. J. Calder, Upper Tooting, S.W.; H. J. Chetwood, Felsted, Essex; D. J. Chisholm, Edinburgh; C. W. Christian, South Fosse, Leicester; H. W. Clapson, Deptford, S.E.; G. L. P. B Cockrell, Higher Broughton, Manchester; V. Constable, Springburn, Glasgow; W. H. Cooksley, Miskin, Pontyclún, R.S.O., Glam.; C. Cooper, Fenscowles Old Hall, near Blackburn; R. T. Cooper, Twickenham; H. J. Copley, Gainsborough; S. H. Corner, Portsmouth; W. N. Couldrey, Bristol; J. L. Coverdale, Whitby; C. G. Cowlishaw, Basford, Stoke-on-Trent; H Cox, London; O. R. Dawes, Temple Newsam, near Leeds; P. Dawson, Liverpool; R. Dickett, Preston; G. M. Dunn, Shortlands, Kent; F. H. Durant, Leighton, Essex; H. Edmonds, Wolverley, near Kidderminster; W. H. Ellison, Barnsley; J. R. Fairbairn, Harlesden, N.W.; W. Fawkner, Macclesfield; G. Field, Eastbourne; H. T. Field, Hull; E. Finn, Canterbury; T. W. Fullerton, Kilburn, N.W.; C. G. Fullford, Salisbury; H. E. Gelder, Hull; J. G. Gibbons, Handsworth, Birmingham; G. E. Gibson, Newcastle-on-Tyne; G. B. Gilliat-Smith, Bruges, Belgium; H. H. Golding, Whitehall Park, N.; A. Grimoldby, Hull; J. C. Guillet, Kensington, W.; H. M. Gundry, Paddington, W.; W. J. Halls, Exeter; A. K. Hamilton, Henley-on-Thames; A. A. Hands, Park-road, N.W.; D. B. Hart, St. John's Wood, N.W.; H. L. Hicks, Gosforth, Newcastle-on-Tyne; A. Hill, Huddersfield; H. C Hollis, London; R. T. Holman, Topsham; H. L. Honeyman, Glasgow; G. J. F. Hookway, Tufnell Park, N.; B. B. Hooper, Brixton, S.W.; F. B. Hooper, High Wycombe; T. Hudson, Bolton, Lancs; H. W. Humphry, Bournemouth West; S. H. H. Ixer, Clapham Common, S.W.; R. O. Jackman, Kingston Hill, S.W.; B. V. Jackson, Moseley, Birmingham; J. M. James, Weston-super-Mare; G. W. Jarrett, Wimbledon, S.W.; H. L. Jenkins, Brockley, S.E.; D. B. Jenkinson, Rotherham; G A Johnson, Croydon; W. A. Johnson, Levenshulme, Manchester; W. H. Johnson, Wigan; C. T. Jones, Hammersmith; R. A. Jones, Stamford Hill, N.; W. I. Keir, Bath; R. C. Kennard, Northampton; P. E. Kennedy, Morpeth; A. G. Kiralfy, Earl's Court, S.W.; C. W. Kirkham, Bolton; W. Langcake, Sheffield; W. C. Lemaitre, London; H. Lidbetter, Carlisle; R. B. Ling, London; W. A. Mackay, Seven Kings, Ilford; S. A. H. Mackey, Warrington; M. R. Martin, Chiswick, W.; P. May, Dulwich, S.E.; J. R. Mead, Burton-on-Trent; W. L. Mellor, Halifax; A. C. Meston, Aberdeen; C A. L. Morant, Bristol; L Morgan, Lee, S.E.; L W. Myers, Cambridge; L. Nagington, Walton, Liverpool; H. Nuttall, Oldham; C. Oldrey, Bedford; B. W. Oliver, Newport, Barnstaple; W. M. Oliver, Newcastle-upon-Tyne; R. W. Orme, Oldham; F. J. Osborne, Birmingham; W. Overton, Sutton; G. F. Paget, Gainsborough; J. Pearce, Exeter; H. M. Pett, Brighton; J. A. Pirie, Inverness; T. C. Pope, Shepherd's Bush, W.; W. Pritchard, Lancaster; C. L. Reinmann, St. Leonards-on-Sea; N. A. Rew, Great Berkhamsted, Herts; C. K. Richardson, Horbury, Wakefield; N. B. Robertson, Leicester; G. C. Rogers, Clapham Common, S.W.; G. H. Rowledge, C.-on-M., Manchester; P. W. G. Rudhall, Brighton; F. G. Russell, Bruce Grove, N.; E. S. Ruthen, Cardiff; A. L. W. Sampson, Redhill; H. Sandford, Gravesend; H F. Saxelbye, Hull; C. W. Sayer, Peckham, S.E.; H. R. Sayer, Peckham, S.E.; T. E. Scammell, Redland, Bristol; N. Scott, West Hartlepool; T. H. Shelmerdine, Blundellsands, Liverpool; H. R. S. Shires, Plymouth; G. G. Sigismund, Fewhurst, Billingshurst; S. Simons, London; A. G. Sladdin, Brighouse; A. F. Slaughter, Reading; C. B. Smith, Ipswich; D. I Solomon, London; C. A. Stanley, Tring; G. H. Stelfox, Longsight, Manchester; D. W. Stewart, South Tottenham, N.; A. Sunderland, Keighley; B. H. Sutton, Reading; F. S. Swash, Newport, Mon.; W W. Tipton, Wellington, Salop; H. M. O. Travers, Norwich; C. P. Wade, Yoxford; F. W. Walker, Gravesend; H D. Ward, Hastings; V. Ware, Bournemouth; H. G. Warlow, Sharrow, Sheffield; F. J. Watson, Forest-gate; J. D. D. Watt, Falkirk, N.B.; F. N. Weightmann, Newcastle-upon-Tyne; A. Wilby, Barnsley; O. Whittaker, Heaton, Bolton; A. W. Wilkinson, Tynemouth; J. B. Wills, Clifton, Bristol; T. T. Wills, Portishead, Somerset; J. Wilson, Edinburgh; J. A. Wilson, Crosshill, Glasgow; C. C. A H. Withers, St. John's-wood, N.W.; G. Wittet, Edinburgh; E. M. Wood, Hipperholme Halifax; E. V. Wood, Forest-gate; W. H. Wood, Wolstanton, Stoke-on-Trent; F. Woods, Maidenhead; H. T. Woolfall, Witton, Blackburn; H. Wormald, Beeston-hill, Leeds; W. Wright, Brading, Isle of Wight; H. J. Wyatt, Rabato, Malta.

Intermediate.—The Intermediate Examination, qualifying for registration as Student R.I.B.A., was held in London and the undermentioned non-Metropolitan centres on the 10th, 11th, 12th, and 13th ult. Ninety-eight candidates were examined, with the following results :—

	Passed.	Relegated.	Total.
London	36	34	70
Bristol	6	2	8
Glasgow	1	2	3
Leeds	6	3	9
Manchester ...	1	4	5
Newcastle ...	1	2	3
	51	47	98

The passed candidates, who have been registered as Students, are as follows, the names being given in order of merit as placed by the Board of Examiners :—

H. Ash, Willenhall; A. C. Bossom, London; R. E. Stewardson, London; J. L. Fouracre, Plymouth; H. J. C. Marshall, London; G. A. Farrar, Huddersfield; F. G. Johnson, Risca, near Newport, Mon.; J. E. Braithwaite, Leeds; E. G. Allen, Croydon; A. F. Benjamin, Hyde Park, W.; D. Mitchell, London; W. A. Hodges, Wimbledon Park; F. W. Hayward, Minehead; J. W. Walker, Aberdeen; S. C. Ramsay, Sutton; W. E. Watson, West Kensington, W.; Miss B. Potts, Banbury; P. J. Westwood, Grays; N. Culley, Huddersfield; C. L. Gill, Regent's Park, N.W.; T. T. Sawday, Leicester; A. R. Powys, Montacute, Somerset; W. T. Loveday, Banbury; F. Thorpe, Hathershaw, Oldham; H. McG. Bowes, London; R. W. Yates, Huddersfield; A. E. Brooker, Brockley Park, Forest Hill, S.E.; H. F. Murrell, West Dulwich, S.E.; E. G. W. Souster, Northampton; L. M. Gotch, Kettering; E. E. B. Claypole, Brixton, S.W.; J. I. Tweedie, Annan, N.B.; W. W. Robinson, jun., Hereford; E. G. G. Bax, Catford, S.E.; M. S. Briggs, Wharfebank, Otley; W. A. T. Carter, Bayswater, W.; H. E. Clifford, Watford; R. S. Dacombe, Southampton; W. R. Davison, Woldingham, Surrey; G. T. Forrest, Wakefield; E. L. Haynes, St. Albans; A. R. Holman, Penarth; R. Huggup, Jun., Glanton R.S.O., Northumberland; N. T. Myers, Watford; P. C. Pilling, London; T. E. Richards, Barry; F. J. Robinson, Bath; E. W. Slaughter, Windsor; H. R. G. S. Smallman, Herne Hill, S.E.; F. A. Sprules, Sutton, Surrey; F. G. Stockdale, East Finchley.

Final and Special.—The Final and Special Examinations, qualifying for candidature as Associate, were held in London from the 11th to the 18th inst.* Of the seventy-three candidates† examined, forty-six passed, and the remaining twenty-seven were relegated to their studies. The successful candidates are as follows :—

G. W. Allsop,† Auckland, New Zealand; C. W. Beaumont, Tulse Hill, S.W.; J. H. Belfrage, Chelsea, S.W.; R. Berrill, Sloane-square, S.W.; W. Bevan,† London; H. C. Bishop, Clapham Common, S.W.; E. D. Brown, Catford, S.E.; R. P. Chamberlain, Leicester; H. Chapman, jun., Brondesbury, N.W.; A. R. Conder, Crouch End, N.; E. F. M. Elms, London; R. F. Farrar,† Brixton Hill, S.W.; J. H. Gibbons, Manchester; T. H. Gibbs, Oxford-street, W.; T. S. Gregson, West Norwood, S.E.; B. Greig, Dulwich, S.E.; P. J. Groom, London; P. J. Haywood, London; W. H. Hobday, Stoke Newington, N.; O. Holden, Kettering; A. L. Holder, London; H. S. Jardine, Peckham, S.E.; I. M. Kent, Boynton, Hailsham; R. G. Kirkby,† Sunderland; H. Moger, Herne Hill, S.E.; W. J. Nash, Bournemouth; C. F. Newcombe, Gosforth, Newcastle-on-Tyne; P. C. Newman, Wandsworth Common, S.W.; W. C. Oman, Finsbury Park, N.; E. O. Payne, Kensington, W.; W. S. Payne, Kensington, W.; R. McM. Roberts, Latchford, Warrington; A. R. Robertson, Green Lanes, N.; J. MacL. Ross, Gloucester Gate, N.W.; E. Simm, Osbaldestone, near Blackburn; S. Smith, Sheffield; J. Swarbrick, Manchester; G. Walker, Kennington, S.E.; C. F. Ward, Highgate, N.; L. F. Ward, Moseley, Birmingham; C. W. F. Wheeler, Horsham; T. W. Whipp, Scarborough; H. A. Wilson, South Shields; R. G. Wilson, jun, Aberdeen, N.B.; D. Wood, Hull; W. Wrigley, Wakefield.

* These examinations were held a fortnight later than usual on account of the Coronation arrangements.

† Eight of these candidates were entered for the Special examination, which is for architects in practice not less than twenty-five years of age, and chief assistants over thirty. Such candidates are exempted by special resolution of the Council from the Preliminary and Intermediate examinations, and from submitting testimonies of study. Four of these special candidates passed; a † is prefixed to their names in the above list.

The number of failures in each subject of the Final examination was as follows :—

I. Design	23
II. Mouldings and Ornament	18
III. Building Materials	16
IV. Principles of Hygiene	10
V. Specifications	8
VI. Construction, Foundations, &c.	15
VII. Construction, Iron and Steel, &c.	16

THE BRITISH ASSOCIATION OF WATERWORKS ENGINEERS.

THE annual meeting of the British Association of Waterworks Engineers was opened at Leicester on Tuesday. The members attending the meeting assembled in the Council Chamber of the Town Hall, where they were received and welcomed by the Mayor (Alderman Wood) and other members of the Council.

The Mayor, in welcoming the members to Leicester, said that to their profession the nation owed much. They had shown how the power of water could be developed, how it could be economised, and how it could be distributed.

The business meeting of the Association was then proceeded with. Mr. Frederick Griffith, C.E., Waterworks Engineer of Leicester, presided, supported by Messrs. C. H. Priestley (Cardiff), Bancroft (Hull), Saintey (Windsor), Whittaker (London), Swindlehurst (Bolton), J. S. Pickering (Nuneaton), Kidd (Swadlincote), C. E. Jones (Leyton), R. S. Lloyd, J. Dewhurst, H. G. Keywood, Gilbey (Bath), Ingham (Torquay), Terry (Sheffield), and others.

The President first moved a vote of condolence with the widow and family of Mr. W. A. Richardson, the late President, who died during his year of office.

Mr. C. E. Jones (Leyton), who seconded, said the Association had suffered a great loss in the death of Mr. Richardson, who combined much amiability with a high conscientiousness of duty assiduously performed.

The resolution was passed in silence.

President's Address.

The President then delivered his inaugural address. He said the membership of the Association in all classes was now 262, an increase of thirty-two during the year. As regarded the manufacture of cast-iron pipes, the Council had appointed a Committee to deal with the question of standardising dimensions and weights of cast-iron pipes, and an interim report of this Committee would be presented to the meeting in order that their views might be obtained upon some of the more important points of detail involved in this question. The motto of the engineering profession was "the cultivation of the art of directing the great sources of power in nature for the use and convenience of man," and it must be admitted that engineers of the last century, as well as those of to-day, had been fully alive to that charge, and by strenuous labour had produced results which had contributed in no small degree to the health and well-being of the whole community. The hydraulic engineer, although more or less closely associated with mankind throughout all ages, had vastly increased his influence during the last half-century by a more scientific study of rainfall and other natural phenomena bearing upon his particular work, by a more systematic gauging of rivers and streams, by the construction of vast storage reservoirs to protect our large cities from the effects of occasional drought, by closer study of the processes of filtration and purification of water, and by many other developments having for their object the more perfect distribution of an abundant supply of pure water at a minimum of cost to the consumer. With improved sanitary conditions, including pure air and pure water, the number of water consumers had increased even more than proportionately to the advance of the trade of the country, with the result that in many cases sources of supply which seemed inexhaustible a generation ago had gradually failed to meet increasing demands, and the consideration of additional supplies had been forced on the various water authorities from time to time. In this way large centres of population had been to an increasing extent compelled to go great distances to secure sufficiently abundant sources of pure water. Glasgow was one of the first to take the lead in this direction by going to Lake Katrine for its supply, and in course of time Liverpool, Manchester, and Birmingham had followed suit. London, however, still awaited the provision of a water supply from a similar pure and abundant source. The scheme for securing to Leicester a share of the water in the Upper Derwent watershed was a truly noble undertaking, and a fitting mark of the dawn of the twentieth century. Its most striking and unique feature was the fact that it provided for the supply of three other important trade centres—Sheffield,

Derby, Nottingham — as well as Leicester. Owing to the magnitude of the works required, this new source of supply would not be available for about eight years.

Already the water population of Leicester had reached 250,000 persons, the consumption for all purposes averaging 19·25 gallons per head per day, of which about one-third was supplied by meter for trade purposes, and the remainder used for domestic supply. During the period of municipal control the water population had increased by 150 per cent., while the consumption per head per day had been reduced by 30 per cent.; in other words, while the total average yield of the present works was under 5,000,000 gallons per day, the prevention of waste enables a constant supply to be given. If the consumption per head was the same now as at the time the company's undertaking was acquired, the quantity of water necessary to give a constant supply would be 7,000,000 gallons per day: thus, the result of the system of distribution and prevention of waste adopted in Leicester under municipal control was a saving of 2,000,000 gallons per day.

It could not be denied that many of the great cities and centres of population had been obliged to seek new sources of supply much sooner than would have been the case had reasonable precautions been adopted to reduce the amount of preventable waste which in so many cases was permitted to go on unchecked. It was well known that some authorities were using as much as forty-five to fifty gallons per head per day, and were consequently surprised and alarmed when, during a summer drought, the sources of supply threatened exhaustion, the simple and obvious reason being that in most cases the consumers were permitted to waste their resources by the use of bad or inferior fittings, and excessive underground waste from burst pipes and services was also neglected, both of which could easily be detected by a proper system of waste inspection. That Association would confer a lasting service on all water authorities if they would take this matter into consideration and draw up a set of standard regulations for the prevention of waste and misuse of water. Such model regulations should then be submitted to the Local Government Board for confirmation, and application be made to Parliament for a short general Act conferring the necessary powers of compulsion upon any water authority that desired to avail themselves of them.

On the proposition of Mr. Priestley, a vote of thanks was accorded to the President for his address.

Standardising Water-fittings.

Mr. R. S. Lloyd then presented a paper on "The Standardisation of Water-fittings." He said that at the present time the attention of the Institution of Mechanical Engineers was being devoted to the standardisation of pipe-flanges, and that of this Association to the standardisation of cast-iron pipes. Why should it not be possible to agree upon a standard of construction of water-fittings, especially when the disadvantages of the present want of system were obvious? These disadvantages might be summarised, first, to the waterworks engineer, because, in the absence of any standard, he had to lay down his own rules. There were not many engineers, however experienced, who had had the special training that was essential to draft rules and regulations, and, consequently, they rarely found any two undertakings making similar rules, while in many cases the system of supervision was extremely lax and inefficient, thus producing an enormous amount of preventable waste throughout the country. Secondly, to the public, because the consumer lost the benefit of free and open competition, and often had to pay a special price for a fitting which might not be the best procurable. Thirdly, to the manufacturer, because he had to keep large stocks of finished and partly manufactured goods of a large variety of patterns. The fittings which it was suggested should be dealt with at the first were (1) connexions between mains and services; (2) stop-cocks; (3) draw taps for hot and cold water, including basin and sink taps; (4) cisterns and valves for closets and urinals; (5) fittings for automatic supply, such as automatic flushing cisterns and ball valves; (6) fire hydrants and road-watering posts or standpipes; and (7) hydrants. The standard might prescribe the size, weight, thread, and finish of cocks, valves, and hydrants. Standardisation would give relief to the waterworks engineer from a difficult and thankless addition to duties, would give the public the opportunity of buying reliable fittings in an open market, and would give the manufacturer greatly increased facilities for production and distribution at a reduced cost.

Mr. Jones (Leyton), Mr. Kennedy (Kilmarnock), Mr. Terry (Sheffield), and others took part in a short discussion.

Illustrations.

ILLUSTRATIONS OF THE ARCHITECTURAL ASSOCIATION EXCURSION.

THE whole of our illustrations are of places which are being visited in the course of this week by the members of the Architectural Association in the course of their annual excursion; and they will be found mentioned or described in the account of the excursion which has been written for us, and the first portion of which appears in this issue.

Broughton Castle, which is illustrated this week, belongs to the latter part of the excursion, and will be described in our next week's issue; but we thought it better to group as many of the illustrations as possible in the present issue.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, Sir J. M'Dougall, Chairman, presiding.

Loans.—On the recommendation of the Finance Committee, it was agreed to lend Shoreditch Borough Council 5,180*l.* for purchase of land, Battersea Borough Council 6,000*l.* for electric light installation and street lighting, and 2,000*l.* for preliminary expenses in connexion with a housing scheme; Hampstead Borough Council 2,150*l.* for underground conveniences; and Woolwich Borough Council 530*l.* for provision of a disinfecting station.

The Council and the Bill-posters.—The General Purposes Committee reported the receipt of a communication from the London Society of Lithographic Printers, asking that a deputation might be received upon the subject of bill-posting on the Council's hoardings. The request was acceded to, and the deputation urged that greater use might be made of the hoardings for advertising purposes. A discretionary power in these matters was conferred in 1896 upon the various committees concerned. The General Purposes Committee, having inquired into the extent to which the power had been exercised, were of opinion that the existing regulations were satisfactory.

The report was received.

Inventions by Officials.—The General Purposes Committee recommended the Council to assent to the assignment to Mr. A. C. Brown of a joint patent for improvements in telephonic fire-alarms on certain conditions. One of the conditions was that the free use of the invention should be allowed to the Council, but that the name of the Council or of Captain Wells should not be used in connexion with it.

The recommendation was adopted.

Application of Science to Industry.—An adjourned report of the Technical Education Board stated that England, and particularly London, had suffered the loss of certain industries, and that others were in danger, in consequence of defective higher education, by which the application of science to industry was retarded. London was still seriously behind other cities, notably Berlin, in the provision for the higher grades of scientific training and research. The circulation of the Report was recommended.

Mr. Organ moved to add to the recommendation—"and that the Technical Education Board be instructed to report as to the steps it proposes to take in order to give practical effect to the suggestions contained in the report." He was anxious that so important a report should not be shelved, and that some definite action should be taken upon it. Our trade was leaving us because we had not the means of training the leaders of industry in the way they should be trained, and because the London boy had not a free and open chance of getting his living at skilled industry. Any sum between 5,000,000*l.* and 10,000,000*l.* was necessary to put London on the same high educational basis as Berlin or the Scottish universities.

Mr. Benn formally seconded the amendment.

Mr. W. Emden said Mr. Organ was not correct in some of his statements. He (the speaker) denied that pottery, for instance, could be bought as well abroad as in England.

Mr. Burns, M.P., said he declined to accept the conclusions of the Committee. He was in Germany a year ago, and out of 117,000 men in Berlin engaged in the electrical machinery and engineers and cognate trades there were 26 per cent. out of work. Coming to England, which was supposed to be tottering to its fall in the opinion of some people, he found out of 117,000 people engaged in the electrical and cognate industries there were only 2 to 3 per cent. of men out of work.

Dr. Napier said that while he did not take a gloomy view of the situation, he thought they were entering on a great commercial struggle, in which scientific training would be of greater importance than ever before.

Mr. Sidney Low said the doctrine of relying on the instincts instead of trained knowledge had been the cause of many misfortunes in the past, and would be the cause of greater misfortunes in the future. They were told that they were to rely not on knowledge and training, but on the inherent ability which was in the breasts of the British working man. He yielded to no one in his admiration of the intelligence and courage and discipline of the British working man, but Mr. Burns would not substitute the courage and discipline of the soldier for the scientific training of the officer. The Committee did not say that the London workman was inferior to other workmen, but that the organiser and director was insufficiently trained, and they pointed out that Berlin alone was spending more money and training many thousands more people than the whole of England. He felt that no one who had the interests of British industry at heart could refuse to accept the conclusion that it was necessary to do something in this matter. At the same time, he deprecated the appeal to millionaires, and he thought the more dignified course would be for the governing body of London to come before the governing body of the Realm and ask them to take steps to remedy the defects, and put London in the position of relying, not merely on the instincts of its inhabitants, but on the scientific knowledge with which other nations are developing their industries.

Mr. Howell J. Williams said that many building trade industries were being enticed away from London by provincial towns, and the local industries in those towns were also being fostered. The Technical Education Board ought to do very much the same. What was needed in London was a return to the apprenticeship system.

Mr. Crooks suggested the giving of scholarships in the form of premiums for apprenticeship.

Mr. Webb said they had no power to do so. They had already strained the law in the direction of the practical teaching of trades. London had lost the watch-making and silk-weaving industry, and he was afraid they would lose the leather industry. It was true they had other industries developing, but the question was whether they were as good as those lost. They wanted industries which would call forth the highest qualities of Londoners and not the lowest.

Mr. Ward (Chairman of the Technical Education Board) accepted the amendment, and the Report was adopted.

Means of Escape in Case of Fire.—The Building Act Committee brought up an adjourned Report setting out revised regulations as to the provision of means of escape from fire at factories and workshops. The Report was printed in our last issue, p. 56.

The Council approved the new regulations.

Tramways Reconstruction.—The Highways Committee recommended votes amounting to 114,000*l.* for tramways reconstruction, in view of electrical traction, between New Cross Gate and Greenwich.

The Finance Committee pointed out that 644,350*l.* had already been voted for similar purposes, and that the conversion of the lines to electric traction was estimated to yield a large increase of net profits.

The Council approved the estimates, and

FROM A PHOTOGRAPH BY H. D. STANLEY, BANBURY.

ARCHITECTURAL ASSOCIATION EXCURSION: BROUGHTON CASTLE, FROM THE NOR

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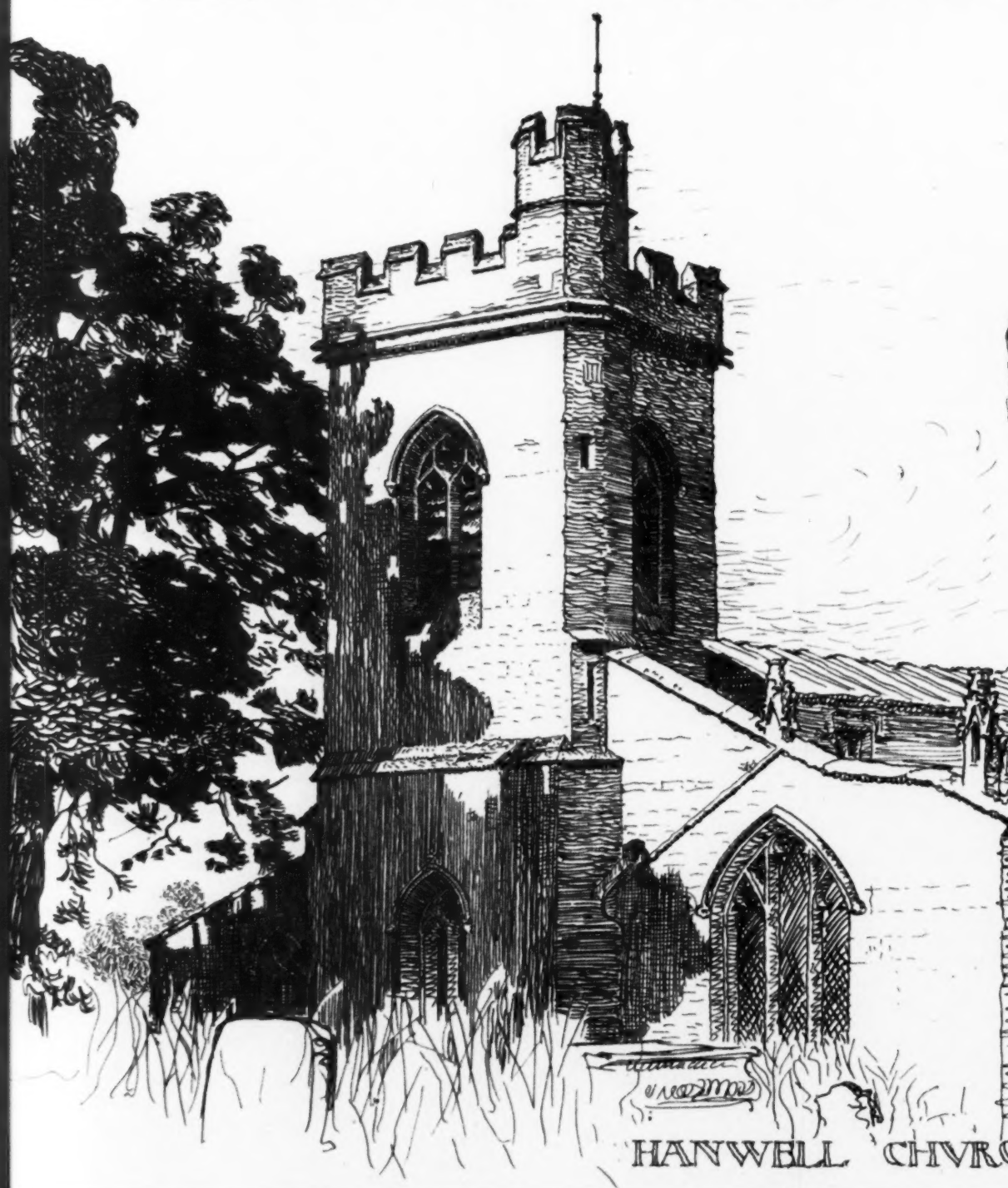
FROM A PHOTOGRAPH BY H. S. STANLEY, BANBURY.

ARCHITECTURAL ASSOCIATION EXCURSION: BR

"INK-PHOTO," SPRAGUE & Co. LTD. 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

SION: BROUGHTON CASTLE, FROM THE NORTH-EAST.

FRAGMENT IN HANWELL CHVRCH.



HANWELL CHVRCH

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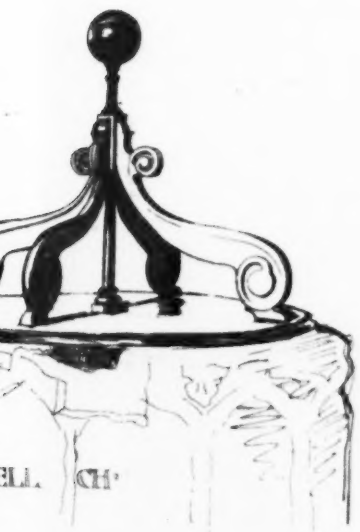

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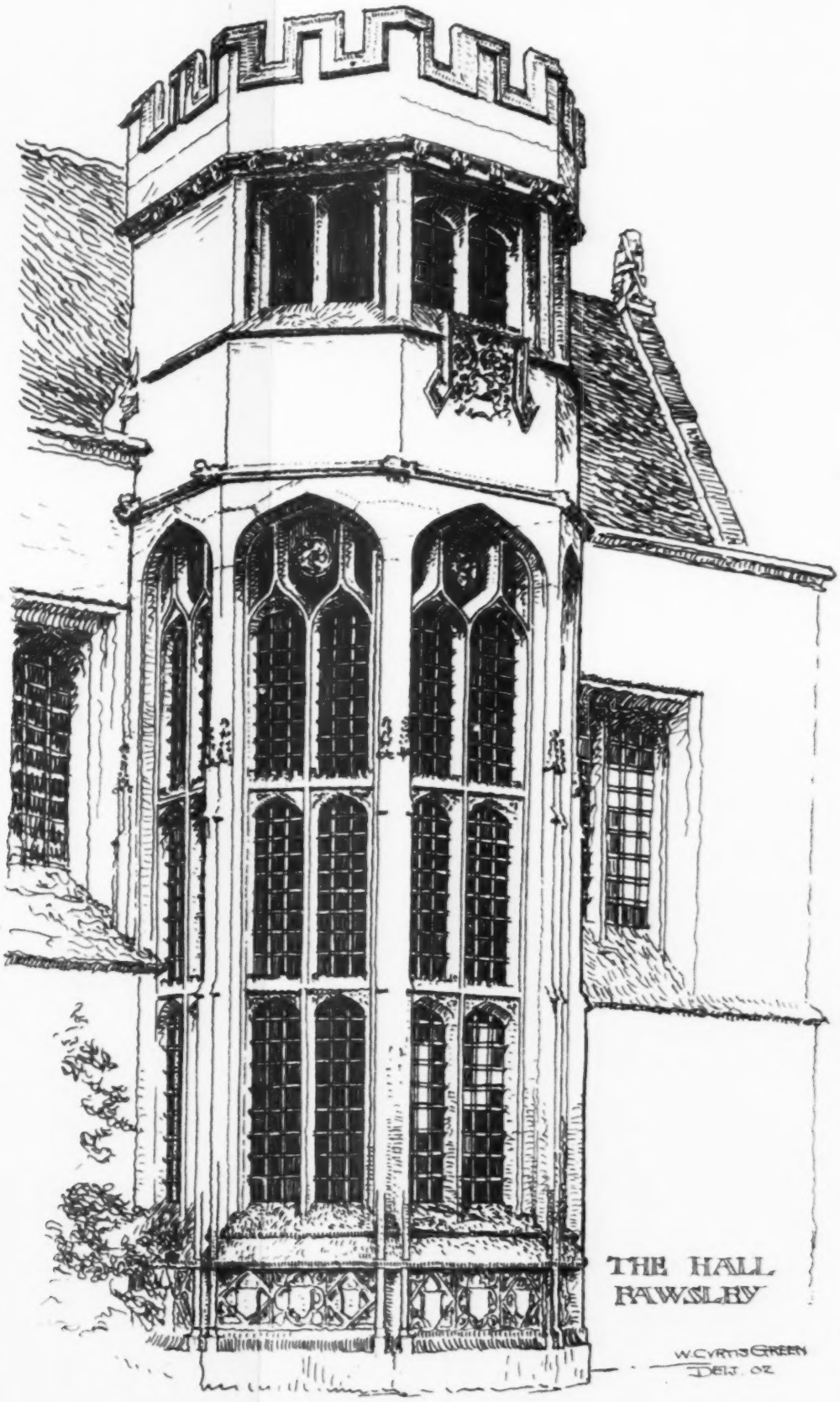

THE HALL
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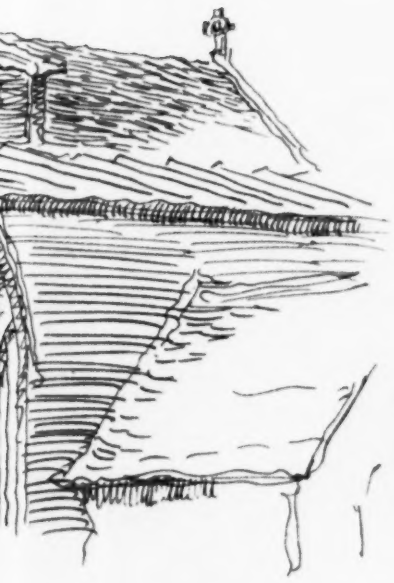
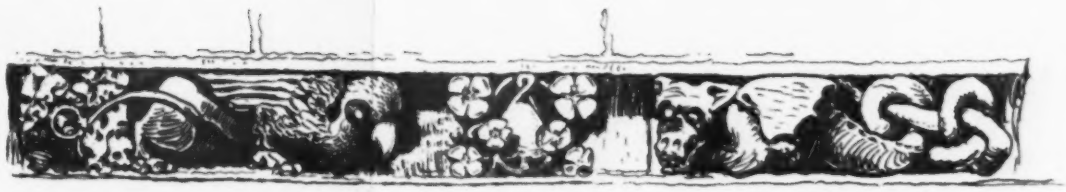
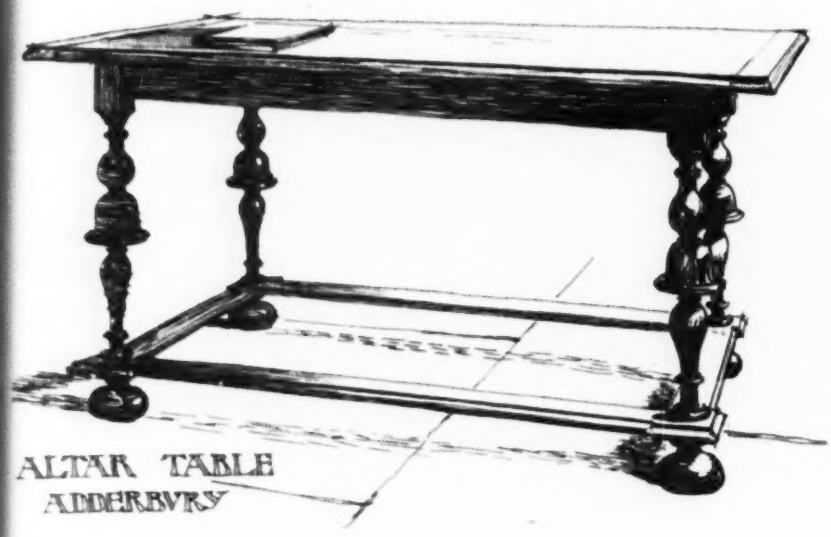


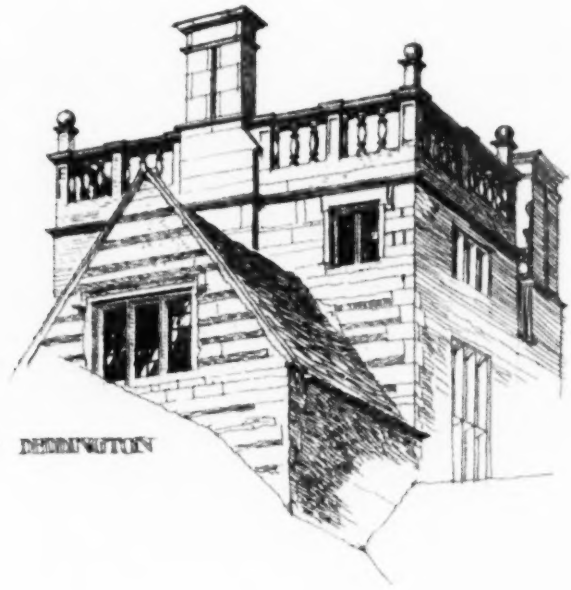


ADDERBURY.

PHOTO-LITHO SPRAGUE & Co LTD 4 & 5 EAST HARDING STREET, FETTER LANE E.C.



ALTAR TABLE
ADDERBURY



EAST GABLE
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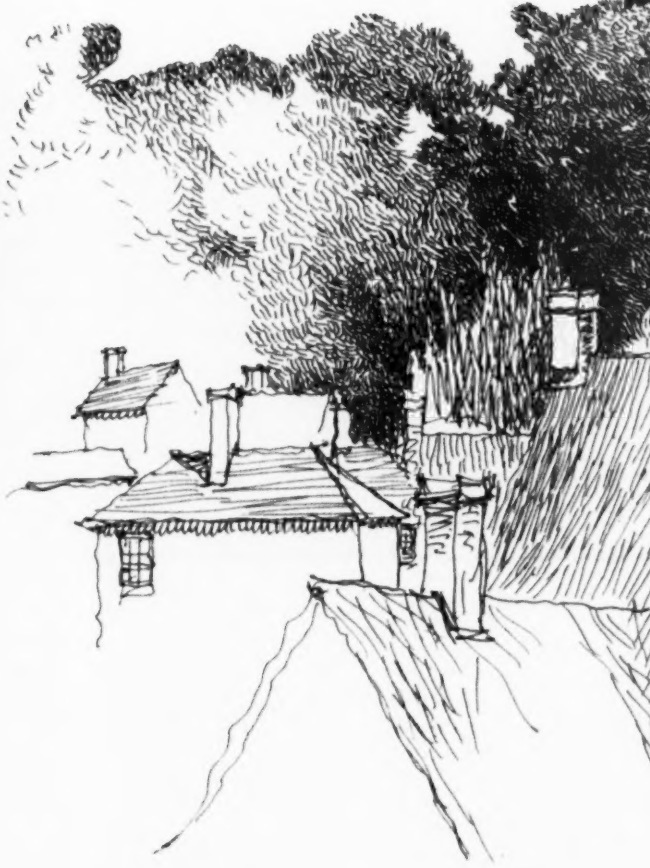

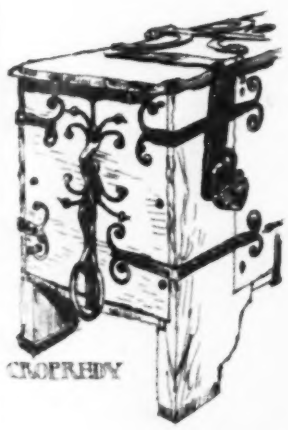

CROPREDY

CH· PORCH CHALCOMBE

PHOTO-LITHO SPRAGUE & Cº LTD 4 & 5 EAST HARDING STREET FETTER LANE E.C.

CANONS ASHBY

PHOTO LITHO SPRAGUE & CO. 142 EAST HARDING STREET FETTER LANE E.C.

PHOTO LITHO SPRAGUE & CO LTD 4 & 5 EAST HARDING STREET FETTER LANE E.C.

ARCHITECTURAL ASSOCIATION EXCURSION

authorised the Bridges Committee to make all necessary arrangements for the alteration of bridges over the railways, in order to permit of the laying of electrical conduits in the carriage-way.

Cambridge-road, Bethnal Green, Improvement.—The Improvements Committee reported that as far back as 1885 a proposal for the widening of Cambridge-road was made to the Metropolitan Board of Works by the Vestry of Bethnal Green. It was an important main thoroughfare, but it was only 30 ft. wide in the narrowest parts, and an improvement was urgently needed. The Committee asked the Council to approve an estimate of 50,000*l.*, subject to a contribution of one-fourth by the Borough Council, for the widening of Cambridge-road to 70 ft. between Old Ford-road and Palestine-place.

Mr. Austin opposed the recommendation, and moved an amendment to refer it back, which was seconded by Dr. Cooper.

The amendment, however, was rejected, and the recommendation was adopted.

Main Drainage Extension.—The Main Drainage Committee observed that considerable progress had been made with the enlargement of the northern outfall sewer between Abbey Mills and Barking. Two additional lines of sewers were now required between Old Ford and Abbey Mills, and the Committee submitted an estimate of 200,000*l.* for that purpose. It would be necessary to apply to the Home Secretary for compulsory powers to acquire the land, which was now vacant, but which might shortly be used for the erection of school and other buildings if the Council did not take steps beforehand.

The Finance Committee pointed out that the proposed works formed part of a scheme, estimated to cost about 3,000,000*l.*, which was submitted to the Council in December, 1899, and in respect of which 1,250,000 had already been voted.

The Council approved the estimate of 200,000*l.*

Theatre Regulations.—The Theatres and Music-halls Committee reported that the Council, at its meeting on November 9 last, granted twenty-three licences for stage plays, and to each of such licences attached rules which were to be observed by the lessees. They were of opinion that certain of the rules should be printed on the programmes of the performances for the information of the public, and that certain other rules should be posted up behind the curtain for the information of the artistes and employees. The Committee pointed out that it was not suggested that any of the rules should be waived, and they had simply made selections of those which principally affected the audience and the artistes respectively.

A recommendation on the lines of the Report was adopted by the Council.

Rotherhithe Tunnel Rehousing.—The Bridges Committee reported that the draft scheme for rehousing persons of the working classes who would be displaced by the construction of Rotherhithe Tunnel had been forwarded to the Home Secretary. It provided for the erection of dwellings in Ropemaker's-fields and London-street, on the north side of the river, and in Swan-lane and Albion-street on the south side. All the property on the Ropemaker's-fields site had been acquired, and the Housing Committee proposed to erect dwellings to accommodate 340 persons, at an estimated cost of 15,995*l.* The amount available was only 14,198*l.*, thus leaving a capital deficiency on the erection of the buildings amounting to 1,397*l.*, to which must be added the value of the land, estimated by the Council's valuer for housing purposes at 1,000*l.* It had been found necessary to carry the foundations to a depth of 20 ft. 6 in., which in itself was a heavy disability on the site. The dwellings were urgently needed, and the Committee recommended the Council to fix the value of the site at nil, and to charge the deficiency of 1,397*l.* on the building to the account of the tunnel improvement.

The Finance Committee submitted a special report, stating that the proper course to adopt was to debit the scheme with the value of the land and the estimated deficiency on the cost of building, or to offer the site for sale. The proposal of the Bridges Committee could not be carried out without a suspension of the standing order, which provided that the rents to be charged for working-class dwellings should not exceed those ruling in the neighbourhood, and that the cost of building, plus the housing value of the site, should involve no charge on the county rate. Moreover, no such entry as was proposed by the Bridges and Housing Committees could properly be made in the Council's accounts.

Lord Welby moved to refer back the recommendation of the Bridges Committee, with instructions to put up the site for sale in order to test its market value.

Mr. Beachcroft seconded the amendment, and stated that the land cost the Council 17,000*l.* They were entitled to know why it was originally bought for such a purpose, and why it was written down, first to 1,000*l.* and then to nothing.

Earl Carrington said this case was a good example of the Council's housing difficulties. The loss on all compulsory rehousing operations ought to fall on the ground landlords of London. They escaped all taxation at present, and imposed all losses and expenses upon their miserable tenants. He hoped to bring forward a detailed scheme, under which the ground landlords would be called upon collectively to do their duty, and meanwhile he supported the amendment.

Mr. Ward urged the Council to consent to the proposals of the Bridges Committee, who must carry out their rehousing obligations.

Sir W. J. Collins pointed out the injustice of blaming the Housing Committee for responsibilities which were thrust upon them of building upon ineligible sites, in connexion with public improvements.

The amendment was carried.

Appointment.—On the recommendation of the Establishment Committee, Mr. W. Bevan was appointed assistant in the Housing of the Working Classes Section of the Architects' Department.

Housing.—On the recommendation of the Housing of the Working Classes Committee, it was agreed that the tender of Messrs. F. & T. Thorne, amounting to 14,959*l.*, for the erection of Ottawa and Baffin-buildings, Preston's-road site, Poplar, be accepted; that the offer of Messrs. Thorne to build the remaining four blocks of buildings at the Preston's-road site at a reduction for all six blocks of 3½ per cent. on the prices contained in their tender for the erection of Ottawa and Baffin buildings be accepted.

The Improvements Committee recommended and it was agreed, that the site in York-road, upon which accommodation is to be provided for the persons of the labouring class to be displaced in connexion with the widening of York-road, Garratt-lane, and Merton-road (re-named Tooting High-street) be appropriated for the purpose of such accommodation, subject to the Home Secretary's approval being obtained in due course to the rehousing scheme for the Garratt-lane and Merton-road improvements, and that the housing value of the land be fixed at 2,380*l.*

Water Gas in the London Gas Supply.—The Public Control Committee recommended, and it was agreed, that a copy of the chemist's report, with regard to the amount of water-gas found in the London gas supply, be forwarded to the President of the Board of Trade, and that he be urged to give effect to the promise contained in his letter of November 21, 1901, and to promote legislation in the matter in the session of 1903.

The Council adjourned soon after seven o'clock.

ENGINEERING SOCIETIES.

SOCIETY OF ENGINEERS.—A very interesting visit was made by the Members and Associates of the Society of Engineers on Wednesday July 16, to the works of the new graving dock and the widening of the Old Extension Quay, at Southampton, and afterwards to the Southampton Corporation Waterworks at Otterbourne. The graving dock now being constructed for the London and South-Western Railway Company at Southampton will be the largest of six dry docks belonging to the company. The river channel is being deepened by dredging to form an ample approach to it. The dock itself will be 860 ft. long (clear inside gates), with provision for extension if necessary; 190 ft. wide at entrance, with the same bottom width inside; and 125 ft. wide at cope level. The whole depth from cope to floor will be 43 ft., giving a depth of water over the keel blocks of from 29 ft. 6 in. neap tides to 33 ft. spring tides at high water. It is built almost entirely of Portland cement concrete, the floor, altars, and walls being faced with this material. The bulk of it is made in the proportion of 8 to 1, the facing to walls and floor, together with the culvert linings, being somewhat stronger, generally 4 to 1. A skin of 4 to 1 concrete is also laid on the underside of the floor, and carried up the back of the walls, so as to prevent any water which may accumulate there from soaking through the more porous concrete into the dock. This 4 to 1 concrete is made with special care, the large stones in the gravel being reduced in a crusher. A mass of 5 to 1 concrete is built in at the skew back, where the walls and floor meet, to resist the heavy crushing stress at that point. The entrance gates, which will have a span of 90 ft. and a rise of 16 ft. 9 in., will be of steel, and will be worked by direct-acting hydraulic rams. The hollow quoins and cill quoins will be of granite from the Shap Quarries in Westmoreland. The steps and timber slides will also be faced with this stone. For emptying the dock the water will fall into large pits near the entrance. From these three large culverts will lead it to the pump wells, placed at some little distance behind the eastern wall, and at a depth of 10 ft. below the dock floor. Over these the pumphouse will be built, and will contain two 48-in. centrifugal pumps, capable of emptying the 85,000 tons of water in the dock in a little over two hours. Space will be provided for a third pump in case the dock should be lengthened. The boiler-house will be built alongside the pumphouse. The site of the dock originally formed part of the extensive mudlands on the River Test shore, which were covered by every high tide. To reclaim the site a bank was tipped round it with chalk taken from the railway company's cutting at Micheldever. While tipping this bank a dredger was at work within removing the top mud, which was very soft and foul. The sea-face of the reclaiming bank was pitched with stone to preserve it from storms, and covered with clay to render it water-tight. The latter process was a very troublesome one, owing to the difficulty of finding suitable clay. A supporting toe of 3 in. sheet piling was provided in places where necessary. As soon as the bank was sufficiently sealed to keep out the tidal water the enclosure was dried out with a 9-in. centrifugal pump and engine, erected just inside the bank. At the entrance end the chalk enclosing bank approaches very near the dock, and protection was given to it by driving a complete belt or dam of 12 in. sheet piling across the entrance, which in its turn is supported by raking struts. Inside this again a cross trench was sunk, so as to build the first 20 ft. of dock floor, which now forms a massive toe for the timbering. The arrangement of this timbering is worthy of notice. The wall trenches are now being sunk and timbered in a substantial manner, and directly a length is sunk to its full depth the concrete wall is started inside it. When these walls are completed the dumpling between them will be excavated in a similar fashion and the concrete floor built in, length by length. The excavation for the pump wells, &c., is being similarly dealt with, the trench being heavily piled to avoid all risk of dislocation. Any water which finds its way into the enclosed area is led by pipes and grips to one or other of two pumps, which are provided to keep the works dry.

APPLICATIONS UNDER THE LONDON BUILDING ACT, 1894.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Act, 1894. The names of applicants are given between parentheses :—

Lines of Frontage and Projections.

St. George, Hanover-square.—A stone front to No. 45, Grosvenor-square, Hyde Park (Messrs. E. Wimperis & East for Sir J. Miller).—Consent.

Westminster.—Variation from the plans sanctioned on January 21 for the erection of a one-story shop and porch on part of the forecourt in front of 116, Victoria-street, Westminster, so far as relates to an alteration in the height and projection of the proposed porch (Mr. B. Woollard for Mr. J. Browne Martin).—Consent.

Strand.—An iron and stone balcony at the first-floor level in front of No. 7, St. James's-street, St. James's (Messrs. J. Kinninmont & Sons for Messrs. Glasier).—Refused.

St. George, Hanover-square.—The retention of two oak pilasters, forming part of a shop front, at a less distance than 4 in. from the centres of the party

walls, and the retention of a wood and glass lobby forming an entrance to both shop and dwelling-rooms (Messrs. Waring & Gillow, Ltd., for Mr. E. Collins).—Refused.

Holborn.—The retention of an iron and glass hood over the entrance to No. 37, Hatton-garden, Holborn (Mr. C. J. Higgins for Mr. P. A. Brice).—Refused.

Width of Way.

Whitechapel.—Buildings on the south side of Wentworth-street and east side of George-yard, Whitechapel (Mr. M. W. Jameson for the Council of the Metropolitan Borough of Stepney).—Consent.

Southwark, West.—A workshop building on the south-west side of Waterloo-road, Southwark, with the external walls at less than the prescribed distance from the respective centres of the roadways of Dodson-street and Boucher's-place (Messrs. G. A. Lean & Son for the Corporation of the School for the Indigent Blind).—Refused.

Whitechapel.†—A one-story shed to adjoin No. 20, Royal Mint-street, Stepney (Messrs. J. Sparks & Sons for Mr. A. C. de Rothschild).—Refused.

Means of Escape from Top of High Buildings.

Kensington, South.—Means of escape in case of fire on the sixth and seventh stories of block No. 1, Iverna-court, Wright's-lane, Kensington, for the persons dwelling or employed therein (Messrs. Metcalfe & Greig).—Consent.

Width of Way and Lines of Frontage.

Poplar.—That the application of Messrs. J. & S. F. Clarkson on behalf of the Governors of the George Green Schools, for an extension of the period within which the erection of a two-story addition to the Technical School, East India Dock-road, Poplar, to abut upon Kerbey-street, was required to be commenced, be granted.—Agreed.

St. George, Hanover-square.†—An iron and glass verandah over an existing balcony at the first-floor level in front of No. 9, Queen-street, Mayfair (Messrs. H. Smith & Co. for Mrs. Christophers).—Refused.

Uniting of Buildings.

Paddington, South.—The uniting of No. 11, Westbourne-grove, Paddington, with Nos. 5, 7, 9, 13, 15, and 17, Westbourne-grove, and Nos. 38-43, Douglas-place (Messrs. Barrett & Driver for Mr. H. Dobb).—Refused.

*** *The recommendations marked † are contrary to the views of the Local Authorities.*

COMPETITIONS.

PUBLIC OFFICES, &c., ALDERSHOT.—The first premiated design in this competition is by Mr. C. E. Hutchinson, 11, John-street, Bedford-row, W.C.; the second was by Mr. Thos. Davison, A.R.I.B.A., 28, Great Ormond-street, W.C.; and the third by Messrs. Coggin & Wallis, 15, York-buildings, Adelphi.

TRADE CATALOGUES.

Mr. George Wragge (Wardry Metal Works Salford, Manchester) sends us a sheet with illustrations and description of his "Wardry" steel casement and frame, hung to open outwards. The sections are well designed to ensure weather-proof qualities, and the treatment of the beading as shown is artistic and in good taste; this of course, however, may be carried out from the architect's design. It is in every sense a good casement, both for practical design and appearance.

Messrs. F. Braby & Co. (Glasgow) send us an illustrated catalogue of the principal articles produced at their works. Among these are their "Empress Brand" corrugated and galvanised iron and steel roofing sheets, for which they claim specially durable quality on account of their not being passed through squeezing rolls. The catalogue shows also corrugated skylights; wrought-iron sashes and casements: gutters and pipes; "rustless" manhole covers and other iron and steel articles, treated by the Bower-Barff process; copper boilers; galvanised cattle-troughs, and dust-bins; hurdles, gates, &c.

Messrs. Anderson & Son (Belfast) send a pamphlet with illustrations of numerous buildings, chiefly factories and workshops, which have been covered with what they describe as the "Belfast roof," made at their Lagan Felt Works, Belfast. They should have added to these a geometrical section of their roof, which is wanting; from the views it appears to consist of a series of lattice girder principals of timber, with an elliptical or segmental upper member and a straight tension member, the whole covered with felt on light purlins. Economy and lightness is claimed, and probably with justice, for this form of roof; but why it should be more durable than iron roofs covered with felt, as seems to be implied, we fail to see. However, the roof has a good deal to recommend it.

Messrs. Joseph Cliff & Sons (Wortley, Leeds) sends us a splendidly-printed illustrative catalogue and a price-list of their glazed bricks and tiles. The most notable point in these is the various sections which are made for ensuring a perfect bond between facing bricks and backing, whether of brick or concrete; especially the Shoppee's dovetailed bricks for facings to flat or arched concrete ceilings. There are various forms, too, of their walling which are very well constructed. The few specimens of coloured ornamental bricks we do not like so much—these things are seldom well done except from an artist's designs; but the colours for the self-coloured glazed bricks are very good in tone and furnish opportunity for a great variety of colour design; and the coloured elevations of fire-places built with these bricks are very satisfactory in appearance.

We have received from the Saxon Portland Cement Co., of Cherry Hinton, near Cambridge, a small pamphlet entitled, "Inside Facts about Saxon Portland Cement." It contains a description of the works at Cherry Hinton and of the processes of manufacture. The raw material is a chalky marl of varying composition, which is mixed to insure uniformity, dried, and ground, and again mixed in hoppers, from which it passes into a damping-trough, where it is damped sufficiently to enable it to be pressed into brick shape by means of heavy presses. These bricks are calcined in continuous kilns, and the resulting clinker is crushed and ground to the requisite degree of fineness to form the finished cement. The results of tests by Messrs. Stanger & Blount and Mr. J. West Knights are quoted, and show that the cement is finely ground, sound, and develops a high tensile strength both neat and with sand. The dates of the tests are not given, but we gather that the works have only been in operation for a little over six months, and that during this period the cement has been used on some important works.

The Pulsometer Engineering Co., of London and Reading, send us a pamphlet "concerning the Pulsometer steam-pump," in which there are many interesting illustrations showing the varied purposes to which this useful apparatus may be applied.

Cresswell's Asbestos Company send us a pamphlet on their manufacture, drawing special attention to their asbestos "curfew" blind for placing before a fire, either as a blower for drawing it up, or as a safety precaution when a fire has to be left alight at night. In both conditions it seems to be a useful thing. They have also a special asbestos fire-blower, for use as a newspaper is now often used to fix before a fire and revive it, but which will not catch fire as the newspaper often does. The pamphlet also describes their asbestos artist's canvas and asbestos carbon filters.

Messrs. Lockerbie & Wilkinson send us a card illustrating their registered designs for rain-water heads and pipes, which are excellent in style and are the designs of competent architects—Mr. J. J. Joass, Mr. C. A. Nicholson, and others. It is satisfactory to know where one can find artistic things of this kind kept in stock.

LONDON BUILDING ACT, 1894:

TRIBUNAL OF APPEAL CASE.

THE Tribunal of Appeal under the London Building Act sat at the Surveyors' Institution on Thursday, the 17th inst., to hear an appeal by Messrs. Gellatly & Son, on behalf of Messrs. Taylor, Walker & Co. under Section 13 (4) of the Act, against the decision of the London County Council dated June 10, namely:—"That the request of Mr. James Richard Johnston, on behalf of Messrs. Taylor, Walker & Co., for permission to retain a one-story stable building on the south side of Ropemakers' Fields, Limehouse, at the corner of Thomas Rents, with the external wall of such stable at less than the prescribed distance from the respective centres of the roadways of Ropemakers' Fields and Thomas Rents, be not acceded to."

The members of the Tribunal present were Messrs. J. W. Penfold (Chairman), A. A. Hudson, and E. A. Gruning. Mr. F. F. Dalby, barrister, appeared for the London County Council, and Mr. R. Cunningham Glenn for the appellants.

It was explained that Messrs. Walker, Taylor, & Co. are the owners and occupiers of certain land and premises situate on the south side of Ropemakers' Fields, a highway used for street traffic, and on the west side of the Thomas Rents, a highway used for foot traffic only. For many years the premises were separated from the highways by a boundary wall 12 ft. or thereabouts in height. Between this wall and a building upon the land was a space, the distance across which from Ropemakers' Fields was 24 ft. 20 in., and from Thomas Rents 6 ft. In August, 1901, the appellants, wishing to extend the stables upon the land, instructed their surveyor and builder, Mr. Johnston, amongst other things, to raise the boundary wall to the height of 16 ft. for a distance of 22 ft. 7 in. beside Ropemakers' Fields, and for a distance of 55 ft. beside Thomas Rents, and to roof in the space between the boundary wall and the appellants' buildings. This, which constituted an extension of the appellants' stables, was completed in March last without the consent of the London County Council having been first obtained thereto under Section 13 of the London Building Act, 1894, of which fact the appellants were wholly unaware. Subsequently, the District Surveyor wrote to Mr. Johnston, pointing out that he had erected stables without the necessary yard in the rear and without the necessary certificate. Some weeks afterwards the District Surveyor again wrote, saying he should be glad to hear whether the sanction of the London County Council for the extension of the appellants' stables had been obtained or application made for such sanction. As a fact, a few days previous to the date of that letter, Mr. Johnston made an application to the London County Council in the following terms:—"I hereby formally beg the Council's permission to erect a one-story stable not exceeding 16 ft. in height on the site coloured pink and in accordance with the accompanying plan." In consequence of what afterwards transpired, Mr. Johnston, on May 20, sent a further letter to the London County Council stating that in making an application for a new building there was absolutely no intention to mislead the Council or to suppress any facts, although it appeared that application should have been for permission to retain the existing building. It was on June 10 that the County Council passed the resolution already quoted.

The grounds of appeal were these:—1. That the erection of the stable wall would not, if at all, materially interfere with or diminish the air space on either side of the highways. 2. That the appellants were entitled to maintain the boundary wall within the prescribed distance of the respective centres of the highways whether or not sanction be given to the erection of the stables. 3. That the refusal of the London County Council's consent to appellants' application was unreasonable, and should be reversed.

Before evidence was taken, Mr. Glenn raised an objection to the jurisdiction of the Tribunal, and after considerable argument, the Chairman made the following statement:—If the application is to erect a new building the London County Council have not refused such an application. Their decision is merely as to the retention of an existing building. The notice of appeal, therefore, is bad, because it is an appeal from a refusal of the County Council to an application for the erection of a building. If the application is for permission to retain an existing building, the London County Council have no power to entertain such an application under Section 13 (4)—therefore there is no appeal to the Tribunal under that section.

Eventually, the Tribunal allowed Mr. Glenn's objection to their jurisdiction, and awarded costs to the London County Council.

Correspondence.

VALUE OF WASTE STEAM.

SIR,—As subscribers to your journal for many years, we have been pleased to note some of your recent editorials, including those in the issues of May 24 and July 5, the latter on "Central Heating Plant." The average man to whom such questions are brought at times flies in the abstract to rows of dusty and unsightly "socket and spigot" pipes, and not one man in a thousand has any idea of the economics of the matter.

For instance, to those of us who have studied the various uses to which exhaust steam (or waste steam, as most people call it) can be put for domestic engineering and other purposes, it is almost pitiful to see the daily loss, amounting, without any exaggeration, to tens of thousands of pounds, caused to the owners or those in charge of factories, hotels, asylums, workhouses, &c., by allowing the exhaust steam from the engines, pumps, &c., to blow away to waste. It seems impossible to convince the great majority of men that steam in passing through an engine loses practically nothing. True, it is deprived of its pressure, but its bulk increases in proportion, and for every pound of steam put into the engine, at least 90 per cent. is available for use as low-pressure steam for other purposes, and should be considered as a most valuable asset in any building where a non-condensing engine is fixed.

The article mentioned on page 516 in your issue of May 24 has been specially interesting to us, as our business brings us in daily contact with such

work as you refer to. We have no wish to make this letter an advertising medium, or we should be glad to quote cases where, for a moderate outlay, many hundreds of pounds per annum have been saved in coal bills alone. Your remarks as to central heating stations are very pertinent, and in our opinion the time will come when every electric lighting station will be a heating station for the benefit of the surrounding district. This work is specially practicable now that the "Paul" and the "Warren Webster" systems of "atmospheric steam heating" are being so successfully handled in this country.

We feel sure that when journals such as yours take this question up as you are doing, people will begin to realise the magnitude of the possibilities of economy which are involved in this direction.

D. M. NESBIT,
Managing Director, Ashwell & Nesbit, Ltd.

TOUR IN NORMANDY.

SIR,—Would any of your readers who have been in the North of France give me some idea as to how to make the best use of a fortnight's sketching tour there? R. E. STEWARDSON.

The Student's Column.

THE CHEMISTRY OF BUILDING MATERIALS.

4.—SAND, SAND SUBSTITUTES, POZZUOLANA, AND LIME.

THE word "sand" is applied to any siliceous material in a fine state of division. The sand employed for building purposes usually consists mainly of silica (SiO_2), but it may be either quartz sand or flint sand, and is most commonly a mixture of the two. Flint and quartz are almost identical in chemical composition, both consisting almost entirely of silica, but both usually containing small quantities of iron and other impurities. Of the two forms of sand the quartz sand is usually the purer.

Pure quartz sand is practically inert when in contact with lime, but modern research indicates that flint slowly enters into chemical combination with lime to form calcium silicate. Quartz sand is almost insoluble in hot dilute caustic soda solution under normal pressure, whereas flint is readily dissolved by this solution. Silica in the form of quartz crystals differs, therefore, in certain properties from silica in the form of flint.

The usual text-book statement that the sand in lime mortar is not in any way chemically acted upon by the lime, but is simply in a state of mechanical mixture with it, requires modification. It has been shown by E. Donath and others that the sand used for mortar is rarely pure quartz, but almost invariably contains silica in a form which, unlike quartz, is capable of entering into chemical combination with the lime. The proportion of this active silica varies in different sands. Sand is found in many grades of purity. When it consists almost entirely of silica, it is termed *siliceous* sand, when it contains much silicate of alumina (clay) it is called *argillaceous* sand, and when it contains much carbonate of lime it is known as *calcareous* sand.

The physical condition of the sand is a matter of importance. It should be clean, free from fermentable matter, and should have sharp edges. It is also commonly said that great irregularity in the size and shape of the sand grains is very advantageous in sand used for mortar, but the accuracy of that statement requires further practical demonstration.

Pit Sand is generally good for mortar manufacture, because it has angular grains, but if it contain much clayey or organic matter it should be well washed before use by running water in machines which maintain the sand in constant agitation.

River Sand is water-worn, and does not, therefore, afford so good a "grip" to the setting lime or cement as pit sand. It has usually the advantage of cleanliness and freedom from soluble alkaline salts. For plaster work, river sand is often preferred on account of its freedom from colour. Pit sand is usually yellow or red, owing to the presence of iron oxide.

Sea Sand has not only the fault of being water-worn, but is also impregnated with alkaline deliquescent salts. When it has to be used, the sand should first be washed with fresh water until it is as free as possible from all soluble salts. This washing is a simple, but tedious and somewhat costly operation.

Sand Substitutes.—Any siliceous matter in the form of rough angular grains, free from matter capable of fermenting, and from matter soluble in rain water, can be used as a substitute for sand in lime or cement matter. The London County Council by-laws allow the use of burnt ballast or broken brick as a substitute for sand. Among the many substances which have been successfully employed in lieu of, or in admixture with sand, are furnace slag, burnt clay, clinker from brick kilns, and cinders.

Pozzuolana—In certain districts siliceous deposits are found which may be used partially or wholly as a substitute for sand in lime mortar, and they have, moreover, the property of forming a hydraulic mortar when mixed with limes which are too pure for use in ordinary lime mortar. These deposits are known in different countries under the names pozzuolano, trass, and arènes, but are sometimes all classed under the term pozzuolana.

Pozzuolana is, strictly speaking, a volcanic clayey earth found in the neighbourhood of Pozznoli, near Naples. Pure or fat limes, which are unsuitable for ordinary mortar manufacture, produce, when mixed with pozzuolana—with or without a certain proportion of sand—mortar which resembles that made with hydraulic lime. The proportions commonly used are 2½ of pozzuolana to 1 of lime, or 1 of pozzuolana, 1 of sand, and 1 of lime.

Trass or *tarass* is a volcanic earth similar in character and composition to pozzuolana. It is found near Andernach on the Rhine, and may be used in place of pozzuolana.

According to Berthier pozzuolana and trass have the following compositions respectively:

	Pozzuolana.		Trass.
Silica	44·5	...	57·0
Alumina	15·0	...	12·0
Lime	8·8	...	2·6
Magnesia	4·7	...	1·0
Oxide of Iron	12·0	...	5·0
Potash	1·4	...	7·0
Soda	4·0	...	1·0
Water	9·2	...	9·6
	99·6	...	95·2

These analyses are, however, of little practical value, because they give no indication as to the form in which the silica is present.

Arènes are natural mixtures of ochreous sand and clay, containing a large proportion of soluble silica. They do not appear to be of volcanic origin.

Artificial Pozzuolanas are sometimes manufactured by calcining clays of suitable composition at a low temperature.

Lime is known in chemistry as calcium oxide (Ca O), and is a compound obtained by heating calcium carbonate in the form of chalk, limestone, or marble, until the carbon dioxide has all been expelled, thus:—

$$Ca\,CO_3 = Ca\,O + C\,O_2$$

Carbonate of lime yields lime and carbon dioxide.

The foregoing chemical equation shows the products which would be obtained if pure calcium carbonate were heated, but it has already been shown that no natural stone is a pure compound, and the great differences in the various limes of commerce are mainly due to the presence of different proportions of clayey impurities in the limestone from which the lime is obtained.

When the limestone contains silica or silicate of alumina and iron in a form which, when the limestone is converted into lime, is capable of entering into chemical union with the lime in the presence of water, then the limestone is more valuable as a source of lime for building purposes than a stone of greater purity. When, however, the limestone merely contains silica in the form of quartz sand, the silica in the resultant lime is of no greater value than quartz sand mixed in the ordinary manner when making mortar. Most limes contain certain proportions of both the active and the inert forms of silica.

The limes of commerce may be divided into the following four classes:—(1) Fat, pure, or rich limes; (2) poor or sandy limes; (3) feebly hydraulic limes; and (4) hydraulic limes; but there is no sharp line of demarcation distinguishing one class from another.

Rich Limes are the purest forms of lime, such as are commonly obtained by calcining white chalk. They do not contain more that 5 per cent. of siliceous matter, and are only used by builders for plastering. They increase largely in volume when slaked.

Poor or Sandy Limes contain a considerable quantity of inert silica, in addition to a small proportion of active silica, and should not, therefore, be mixed with so large a proportion of sand as is used for limes free from inert silica. Poor limes do not augment so greatly in volume as rich limes when slaked.

Feebly Hydraulic limes.—The material commonly known in London as "stone lime," which is usually grey chalk lime, ranks in this division. Feebly hydraulic limes, as a rule, contain very little inert silica, but from 5 to 12 per cent. of active silica.

Hydraulic Limes have the power of setting under water. There are many grades of hydraulic lime, the value of the lime increasing with the proportion of active silica and alumina present. Some authorities speak of hydraulic limes containing 15 to 20 per cent. of silica and alumina as "ordinary" hydraulic, and of those containing 20 to 35 per cent. as "eminently" hydraulic. Hydraulic limes slake very slowly, do not become so strongly heated when sprinkled with water as rich limes, and do not increase very largely in bulk when slaking.

Artificial Hydraulic Lime is made by calcining a fairly pure lime with the amount of clay commonly found in good hydraulic lime, say 20 per cent. It may be regarded as a kind of Portland cement. The two ingredients are intimately mixed and then subjected to carefully regulated heat.

Different limes of the same class vary considerably in chemical composition, but the figures in the following table may be regarded as approximate analyses of average samples of the different classes.

Typical Analyses of Different Classes of Lime.

Class	Rich Lime.	Poor Lime.	Feebly Hydraulic.	Hydraulic.	
Source	White Chalk.	Sandy Limestone.	Grey Chalk.	Blue Lias.	Carboniferous Limestone.
Lime	95·4	76·0	84·0	60·3	59·5
Silica	2·5	16·5	11·0	13·7	29·8
Alumina	1·3	3·0	2·0	9·2	5·2
Oxide of iron	0·6	1·0	0·6	4·6	3·3
Magnesia	0·2	3·5	1·9	2·9	1·0
Alkalies	Trace	Trace	0·5	0·3	1·2
	100·0	100·0	100·0	100·0	100·0

The silica in the poor lime is mostly of the inert variety, but in the other limes it is mostly present as active silica. All the building limes usually contain traces of phosphorus and sulphur.

Blue Lias Lime not necessarily derived from Blue Lias Stone.—Blue lias limestone is of a dark blue colour, but when calcined yields lime of a grey colour. The stone varies greatly in composition in different localities, and genuine lias lime may vary through all the grades of hydraulicity, from feebly hydrulic to eminently hydraulic. It has been commonly believed, however, that blue lias lime must necessarily be made from lias limestone, but in view of the recent decision of Mr. Horace Smith in a case at the Westminster Police-court, that faith must be abandoned.

Summonses were taken out by the Blue Lias Lime Burners' Association against the Cam Portland Cement Co., Limited, of Cambridge,

for selling lime under the alleged false trade description of "Ground Blue Lias Hydraulic Lime." The lime in question appears to have been as valuable for building purposes as average blue lias lime, but was made from a stone found in Cambridgeshire, a county in which Blue Lias limestone has never been found.

The evidence and decision given in this case was reported in the *Builder* of February 9 and March 23, 1901, but the decision is so important that the following remarks of the magistrate should be carefully noted :—

"Lime would never have been 'blue lias lime' had it not been that it was for many years made from the Blue Lias formation. But as time went on, many persons began to make lime out of limestone, which was very different from blue lias, and did not belong to the same stratum or formation ; but the lime made from the new quarries was as good, or nearly as good, as the blue lias lime, containing the same valuable qualities in an almost equal degree.

Upon the whole, I find that the weight of evidence as to the general use of the term as expressing *quality*, and its acceptance by all branches of the trade, cannot be resisted. If in the present case defendants had called the lime 'Warwickshire Hydraulic Lime,' a conviction might have followed. The summonses are dismissed without costs."

Properties of Lime.—Pure calcium oxide is a white solid substance, which readily absorbs water from the atmosphere. The lime and water enter into chemical combination, and form calcium hydrate and slaked lime ($Ca H_2 O_2$). During the process of hydration heat is evolved and the lime increases in bulk. When a mass of quicklime is sprinkled with water the evolution of heat occurs so rapidly that the mass may become heated to a sufficiently high temperature to char wood or ignite gunpowder. When exposed to the atmosphere lime absorbs carbon dioxide as well as water vapour, and after exposure for some time the lime is found to consist of a mixture of carbonate and hydrate of lime.

Lime is feebly soluble in water, about 90 grains of lime being dissolved by 1 gallon of water at ordinary temperatures. Unlike most solids, lime is more soluble in cold water than in hot water. A noteworthy property of lime is that it is more freely soluble in a solution of sugar than in pure water. A mixture of sugar and white chalk lime will set with a very hard surface, but the interior of the mass remains friable and deficient in strength. Lime is readily dissolved by hydrochloric acid, a solution of calcium chloride being formed.

The following table shows the relative weights of equal volumes of sand, sand substitutes, and lime. The weights of the sand substitutes are given by Mr. W. J. Dibdin in his work on "Lime, Mortar, and Cement," and it is noteworthy that whereas the weight of brick in brick form is not less than 115 lbs. per cubic foot, the weight of a cubic foot of broken brick is, according to Mr. Dibdin, only 53 lbs.

Weight of one cubic foot of Sand.

Pit sand (coarse)	100 lb.
" " (fine)	95 "
River sand	118 "
Thames sand	103 "

Weight of one cubic foot of Sand Substitutes.

Broken brick	53 lb.
Burnt clay	71 "
Cinders (clean)	60 "
Clinker...	50 "

Weight of one cubic foot of Quicklime.

White chalk lime (in lumps)...	39 lb.
Grey chalk lime (in lumps) ...	44 "
" " " (ground) ...	43 "
Portland stone lime (in lumps)	47 "
Blue lias stone (in lumps) ...	58 to 70 lb.
" " " (ground) ...	49 " 68 "

BOOKS RECEIVED.

ABYDOS, PART I., 1902. By W. M. Flinders Petrie. Being the twenty-second memoir of the Egypt Exploration Fund. (Kegan Paul, Trench, Trübner, & Co.)

DAWLISH, AND THE ESTUARY OF THE EXE. By Beatrix F. Cresswell. Homeland Handbooks Series. (The Homeland Association. 6d.)

GENERAL BUILDING NEWS.

RESTORATION OF CRANTOCK CHURCH, CORNWALL.—The church of St. Crantock, near Newquay, has just been reopened after restoration. A figure of the patron saint fills a niche in the north wall opposite the south door, being the work of Mr. Hitch, of London, who also carved the Calvary in the transept gable. The carved woodwork is the work of Mr. Rashleigh Pinwill, of Plymouth. The building has been repaired and restored by Mr. Nicholls, near Launceston, under the directions of Mr. Edmund Sedding, of Plymouth.

CHANCEL, WASHINGTON PARISH CHURCH, DURHAM.—The foundation-stone of the new memorial chancel in Washington Parish Church was laid recently. The architects are Messrs. Hicks & Charlewood, Newcastle, and the builder is Mr. Robinson, of Washington.

RESTORATION OF DISEWORTH CHURCH, LEICESTERSHIRE.—The restoration of this church has just been completed. The contractor was Mr. F. W. Pendleton, of Leicester ; and the architects, Messrs. R. J. & J. Goodacre, also of Leicester.

RESTORATION OF ST. MARY'S CHURCH, LEICESTER.—The restoration of the tower and spire, also the south aisle and chancel of this church, have just been completed at a cost of 3,000*l*. The contractor was Mr. J. W. Pendleton, of Leicester, and the architects, Messrs. R. J. & J. Goodacre, of Leicester.

PRESBYTERIAN CHURCH, NEWCASTLE.—A new Presbyterian church has just been opened at Newcastle. The buildings occupy a site on the north side of College-road, and comprise a church seated for 700, hall seated for 500, and a number of classrooms, vestries, and a caretaker's house. The style is Late Gothic, and the church is built on the west side of the site, with a tower 80 ft. high at the south-west angle fronting on College-road. A porch admits to a vestibule the full width of the nave, with fireproof staircases at each end, leading to the gallery, which is at one end of the church only. Ladies' and gentlemen's cloakrooms are provided off the vestibule, and there are four doorways leading into the church. The floor has a fall of 12 in. from vestibule to transepts ; the east transept is occupied by the choir and organ. Behind the church a corridor gives access to the minister's vestry, choir vestry, tea kitchen, and hall, and the front vestibule is also in direct communication with the hall. A large building is placed in front of the hall, facing on to College-road, and contains class rooms and managers' room on the ground floor, session and ladies' room on the first floor, and caretakers' house on the third floor. A pitch pine screen the width of the nave divides the vestibule from the church, the upper portion fitted with lead glazing in cathedral glass. The roof is of hammer beam construction, in pitch pine, with panelled ceiling. The pulpit is of pitch pine, and the apse behind the pulpit has panelling in pitch pine carried up to the sill of the window. Behind the pulpit is a five-light traceried window, fitted with stained glass by Messrs. Morris, of Merton Abbey. The full length of the church from the south wall of the gallery to the north wall behind the pulpit is a little over a 100 ft. ; the nave is 41 ft. wide, and the transepts 27 ft. wide, and the height from the floor to the ceiling of nave is 41 ft. 6 in. The lighting is by electricity. The heating is by low-pressure hot water, with pipes and radiators. Messrs. Badenoch & Bruce, Newcastle, are the architects. Mr. Geo. H. Mauchlin is the general contractor, under whom Messrs. France & Sons have executed the plumbers' work, Messrs. Henry Moat & Son the slating, Mr. Andrew Convery the plastering, and Messrs. Adam Robertson & Son the painting. The lead glazing has been supplied by Mr. Baguley, and the heating has been carried out by Messrs. Dinning & Cooke, while the tile floors and stoves and chimney pieces have been supplied by Messrs. Emley & Sons. Messrs. Falconer, Cross, & Co. have installed the electric light, &c.

PRIMITIVE METHODIST CHURCH, BASINGSTOKE.—A new church and Sunday school has just been opened at Basingstoke. The buildings have been erected by Mr. H. Munday, of Basingstoke, from designs prepared by Mr. T. E. Davidson.

CHURCH, BRADFORD.—A new church has been erected at Bradford in an outlying corner of St. Stephen's parish, at Chapel Green, Little Horton. The cost of the building is 15,000*l*., including the site. Messrs. T. H. and F. Healey are the architects, and they have adopted the Early English style. Twin chapels are provided on either side of the chancel, the organ being located in the north-east corner, with an opening into the semi-transept of the north side. The chancel is built in three bays, and the nave in four ; the seating accommodation being estimated at 600.

BAPTIST CHURCH, SOUTH NORWOOD.—A new aisle, with entrance porch, vestry, organ-chamber, choir stalls, &c. (the memorial-stone of which was laid by the late Rev. J. Spurgeon on his ninety-first birthday) has been erected at this church, and a complete renovation of the buildings has been carried out by Messrs. Hanscomb & Smith, builders, London-road, West Croydon, the architect being Mr. W. Theobalds.

TECHNICAL COLLEGE, GLASGOW.—The plans have just been passed for the erection of that portion of the Glasgow and West of Scotland Technical College which is to be built on the ground recently acquired from the School Board of Glasgow, and which is at present occupied by the historical buildings of Anderson's College. The Young Laboratory buildings, which adjoin, will form the subject of a later application to the Dean of Guild Court for the erection of the second portion of the college. The new buildings of the Technical College are in the Renaissance style, and are to be built of red sandstone, and, in their entirety, are constructed to accommodate 5,000 students—a number slightly in excess of those attending the college at the present time. The portion to be erected at the present juncture will run parallel with Montrose-street. On the ground floor will be accommodated the department of natural philosophy. With the exception of two or three rooms to be used for general purposes, the second floor will be devoted to the department of natural science. The third floor will provide accommodation for the department of architecture and building construction, while the chemical department and the department of technical chemistry will be housed on the top floor, the whole of which they will practically occupy in the completed building. Behind the Montrose-street portion of the college, and running parallel to it, will be three blocks of buildings. The first block will contain a portion of the electrical engineering department, but will be principally occupied by the examination hall. In the next block the remainder of the electrical engineering department will be housed, while the third block will embrace rooms for wood-working classes and the department of mining and geology. A wing connecting the three blocks will be occupied by the department of prime movers, mathematics, and metallurgy. Mr. David Barclay is the architect of the new college.

NEW CHAPEL, KNOWLE, NEAR BRISTOL.—On the 15th inst., the new chapel of St. Raphael, which is the first portion of the permanent house to replace the Sisters' old house in Cumberland-road, was opened in connexion with the House of the Sisters of Charity. The chapel is of pennant stone, with Bath stone dressings. There is direct communication from the chapel through a covered passage with the Home of the Sisters. There are plans prepared for the erection of a home, in three blocks, which will at some future period furnish accommodation for 100 Sisters. The contractors for the chapel were Messrs. Stephens & Bastow, the architect being Mr. G. F. Bodley, R.A.

CONSERVATIVE CLUB, TYNEMOUTH.—A new Conservative Club has been erected in Albion-road. The new club premises occupy a site on the main thoroughfare from North Shields to Tynemouth. They have a frontage, facing south, of 60 ft. The building is of red bricks, relieved with stone, bay windows, and porch. In the basement there is a cellar, and the ground floor contains smoke-room, reading-room, cardroom, and luncheon-room. The steward's kitchen and parlour are also on the ground floor. The first floor consists of a billiard-room, the full front length of the building, and is fitted with four billiard tables. On the same floor, and parallel with the billiard-room, is a hall with seating accommodation for 400 persons. Two attic bedrooms are provided for the steward in the upper story. A separate entrance, on the east side of the building, is provided for the hall ; also ante-rooms for ladies and gentlemen. On the staircase there is a ticket or pay box. The building throughout is lighted by electricity, and the principal rooms are connected by electric telephones. The heating apparatus is hot-water pipes. The buildings were designed by Mr. F. R. N. Haswell, North Shields, and the contract has been carried out by Mr. W. T. Weir, of Howden-on-Tyne. The cost of the new premises and their equipment has amounted to over 6,000*l*.

EXTENSION OF FREE LIBRARY AND MUSEUM, PAISLEY.—At a meeting of the Paisley Town Council, on the 15th inst., the Clerk, Mr. Francis Martin, submitted a letter from the Free Library and Museum Committee regarding the extension of that institution. The Committee pointed out that Mr. James Coats, of Auchendrane, had recently agreed to give 5,500*l*. to cover the cost of the extension. Messrs. Honeyman, Keppie, & Mackenzie, Glasgow, had prepared plans for the proposed extension, and, on estimates being taken from these, it was found that the work would cost about 1,500*l*. more than Mr. Coats' original offer. Mr. Coats had, however, intimated that he would be pleased to supply the additional sum required, so that the work might be carried out in the most suitable manner.

WITTON HALL INDUSTRIAL SCHOOL, BIRMINGHAM.—Witton Hall is a three-story, square, red brick house, Georgian in its appearance, with low-pitched slated roofs partially concealed by parapets carried above a moulded stone cornice ; with massive, lofty, chimneys. The old floors are of oak, and some of the walls are lined with oak panelled wainscot. An interesting feature is the old oak staircase, with its moulded balustrade. Previous to the recent alterations there were five rooms on each floor, one of which was the kitchen. A low two-story wing with tiled roof running east and west contained the scullery, pantries, wash-house, laundry, &c., with bedrooms over ; a second wing at right angles to the first, forming the third side of

a quadrangle, consisted of a coach-house, stable, cow-house and pig-styes. In the alterations now completed, by removing several walls, &c., a portion of the ground floor of the house-block has been converted into a dining-hall 48 ft. by 19 ft. On the floor over, a dormitory of similar dimensions has been constructed, accommodating twenty-six beds. The remainder of the house is now used as the Superintendent's residence. The old scullery wing has been extended, its walls thickened, and roof raised, giving space on the ground floor for a new scullery, pantries, a boys' lavatory with twenty-four basins, and a bath-house containing a bath lined with glazed white bricks, and measuring 17 ft. 6 in. by 6 ft. 6 in. and 3 ft. deep. The upper story has a dormitory, 61 ft. by 17 ft. 6 in., accommodating twenty-nine beds, and a sick-room with an independent staircase entrance for isolation; also a masters' bathroom. The stable wing has been cleared out and made to accommodate carpenters', shoemakers', and tailors' workshops, wash-house, laundry, and storeroom. A new wing has been erected on the south-east side of the house, containing the schoolroom, 38 ft. by 24 ft. by 16 ft. high, to be used also as a gymnasium, the principal staircase, and a dormitory over the schoolroom, 38 ft. by 24 ft., accommodating twenty-five beds. Each dormitory is under the control of a master, whose bedroom adjoins, and has a small window for inspection. A one-story wing has also been added, containing the office for Superintendent and Committee and an officers' sitting-room. A playground has been formed in the rear, and a play-shed, 64 ft. by 16 ft., which will eventually be enclosed. The buildings are warmed by hot water on the low-pressure system, which has been supplied by Benjamin Parker, Ltd., of Birmingham. Automatic ventilators and fresh-air inlets have been arranged to give a good supply of fresh air, and the interiors and entrances are lighted by gas. The work has been carried out by Messrs. Mills & Son, from the plans and under the superintendence of Mr. Freeman Smith, architect, of Colmore-row, Birmingham. The Lord Mayor of Birmingham opened the building on the 17th inst. The total cost, including the freehold, was 6,360*l.*

BATHS AND GYMNASIUM, DUNFERMLINE.—The memorial stone of new baths and gymnasium, Dunfermline, was laid recently. Mr. Hippolyte J. Blanc is the architect, and Mr. James Stewart the building contractor.

DISTRICT BATHS FOR BRADFORD.—The Baths and Team Labour Committee of the Bradford Corporation held a meeting on the 27th inst. and decided to accept sketch-plans prepared by Mr. F. E. P. Edwards (City Architect) for the provision of three district baths. The estimated cost of each is 7,000*l.*, including the cost of land. The new baths will be built in Drummond-road (opposite the new Westgate Wesleyan Chapel), in Wakefield-road (near St. John's Church), and in Leeds-road (near the Bower Green district). Those in Drummond-road will first be undertaken.

LEEDS TOWN HALL AND MUNICIPAL BUILDINGS.—The Property Committee of the Leeds Corporation have called in Mr. Leonard Stokes, of London, to advise them as to the adaptation of the Town Hall and Municipal Buildings, and, in fact, on the whole question of accommodation for law courts and municipal offices.

SANITARY AND ENGINEERING NEWS.

SEWAGE WORKS, ALDERSHOT.—Lieut.-Col. Alfred S. Jones, V.C., A.M.Inst.C.E., has been appointed by the Secretary of State for War manager of all sewage works in the Aldershot District. The work will involve the preparation of land for irrigation in six separate localities, at three of which septic tanks and other forms of artificial sewage treatment have been tried and found wanting.

THE CHISLEHURST TUNNELS.—It is stated that Sir Benjamin Baker has made a thorough inspection of the Chislehurst tunnels, which have recently shown signs of failure, and has reported to the Directors of the South-Eastern and Chatham Railway. In the case of the old tunnel, for a comparatively short length there was, he found, some flaking off of the brickwork at the side of the wall nearest the new tunnel, and at the crown of the arch. The new tunnel at the same spot also showed some slight signs of abnormal pressure, as there were a few vertical cracks in the side wall nearest the old tunnel, and the drainage culvert was somewhat distorted. The cause of the damage in both cases was the compressible nature of the soil intervening between the two tunnels at this particular spot; the old tunnel had stood nearly forty years without any signs of failure. The remedy in both cases was, he thought, the same—namely, to invert certain lengths of both tunnels, so as to distribute the weight over the foundations and prevent side walls from moving forward. This was a simple and comparatively inexpensive work, and had often been done before in the case of many other railway tunnels under similar circumstances. It could be executed far more expeditiously and economically if the tunnels were handed over to the contractors free from traffic, and at the same time all risk of accident to trains from portions of brickwork flaking off and falling on the rails would be avoided. He strongly advised, therefore, that the traffic should be diverted, not merely until the damaged brickwork of the side walls and arch was restored, but until the new inverts were completed. This course would not only be safer, but involve, in his opinion, less public inconvenience in the long run. The directors, it is stated, will act upon his advice.

MISCELLANEOUS.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.—Mr. Henry B. Downs, architect and surveyor, has removed his offices from 49 Queen Victoria-street to 10 and 11, Lime-street, E.C.—The firm of Diespeker & Co., artists in mosaic, 57-60, Holborn Viaduct, has been formed into a limited company. Mr. L. Schlentheim, who has been a partner in the firm since its foundation in 1879, will be joined as director by Mr. R. O'Bryen.

THE LAW RELATING TO BUILDING SOCIETIES.—In our notice of this work in our issue for July 12, p. 35, we gave the author's name incorrectly. It should have been printed E. A. Wurtzburg, not Warzburg.

ST. MARY'S CHURCH, STAMFORD.—The writer of a communication on this subject should have sent his name and address.

APPOINTMENT OF SANITARY INSPECTOR.—The Local Government Board has sanctioned the appointment of Mr. F. J. Haben as a sanitary inspector in the metropolitan borough of Hackney.

AMERICAN BUILDING TRUST.—The New York correspondent of the *Morning Post* has sent the following communication to that journal:—"A trust affecting Great Britain has been formed by the principal construction firms in the United States with a capital of sixty million dollars. The Fuller Construction Co. is the chief mover in the combination, and there is almost unlimited financial backing for the trust. Several contracts have already been secured for London, and the combination intends to make determined efforts to enlarge its business in the British provincial fields. It is prepared to bid for the erection of structures from one to forty stories high."

THE ROYAL AQUARIUM, WESTMINSTER.—At the sitting, on Wednesday last, of the Wesleyan Conference at Manchester, it was announced that provisional arrangements had been made for acquiring the freehold site and buildings of the Royal Aquarium, Westminster, at an expenditure of 330,000*l.* The site covers about 106,000 ft. super., and will be cleared for the erection thereon of a Church House and a Great Central Hall, as dedicated to the service of Methodism. The present buildings include the Imperial Theatre, of which a fourteen years' lease at an annual rent of 2,000*l.* was taken by Mrs. Langtry, who has expended some 30,000*l.* or 35,000*l.* upon the property. The Royal Aquarium and Winter Garden was opened on January 22, 1876, having been erected after plans and designs prepared by Mr. A. Bedborough, and illustrated in the *Builder* of May 1, 1875 (general view, double-page woodcut), and January 22, 1876 (plan). Messrs. Lucas were the general contractors for nearly 90,000*l.* The two principal fronts, built of red Farnham bricks with Bath and Portland stone dressings, extend about 600 ft. and 85 ft. along Tothill and Princess-streets respectively. The roof, glazed after Rendle's patent, was constructed by the Thames Ironworks Company. Beneath the floor of the main building were built a reservoir with nine large brick tanks having invert and culvert arches for the supply of fresh and sea water to the exhibition tanks, with a service of vulcanite pipes, the engineers being Messrs. Leete, Norman, & Edwards.

THE USHER BENEFACTION, EDINBURGH.—The Town Council of Edinburgh have resolved to purchase for 30,000*l.* the site and buildings of the United Presbyterian Church Synod Hall and of some adjoining property in Castle-terrace, for the erection thereon of the Usher City Hall, which they had originally proposed to build at Atholl-crescent. The Synod Hall, formerly a theatre, has latterly belonged to the United Presbyterian Church, who, however, since their union with the Free Church, no longer need a separate meeting-place. The new Usher City Hall will have a capacity for about 3,500 people. The Usher Institute of Public Health in Warrendon-park, a gift of Sir John Usher, Bart., and built after the plans and designs of Messrs. Leadbetter & Fairley, of Edinburgh, has recently been formally committed to the charge of the University authorities in that city.

ST. GEORGE CHURCH, BOTOLPH-LANE, E.C.—Preparatory to the demolition of the fabric, measures have been taken for the removal of all human remains to other consecrated ground. The united benefices of St. George, Botolph-lane, and St. Botolph, Billingsgate, have been united with that of St. Mary-at-Hill, which has recently been constituted the church of the three united parishes. The tablets and monuments are to be removed to St. Mary-at-Hill Church from St. George Church, which was finished in 1674, at a cost of 4,509*l.*, from plans and designs by Sir Christopher Wren. The design, whilst devoid of any striking architectural features, presents a typical specimen of Wren's work for the less important churches of London, embracing a tower, square on plan, that rises at once from the ground, with a solid, unbroken basement story for the body of the church.

INCORPORATED CHURCH BUILDING SOCIETY.—This Society held its usual monthly meeting on Thursday, the 17th inst., the last of the present session (to be resumed in November), at the Society's House, 7, Dean's-yard, Westminster Abbey, S.W., the Rev. Canon C. F. Norman in the chair. Grants of money were made in aid of the following objects, viz.:—Building new churches at Dalton-in-Furness, St. Margaret, Lancashire, 100*l.*; Haslemere, St. Christopher, Surrey, 120*l.*; Muswell Hill, St. Andrew, Middlesex, 300*l.*; Southampton, St. Barnabas, 75*l.*; and Stoughton, Emmanuel, near Guildford, 60*l.* in lieu of a former grant of 50*l.*; rebuilding the Church of St. Andrew, Stoke Damerel, Devonport, 100*l.* for the first portion; and towards enlarging or otherwise improving the accommodation in the churches at Compton Martin, St. Michael, near Bristol, 30*l.* in lieu of a former grant of 20*l.*; and Ratcliff, St. James, Middlesex, 40*l.* in lieu of a former grant of 25*l.* Grants were also made from the special Mission Buildings Fund towards building mission churches at Five Ways, St. John the Evangelist, near Cannock, Staffs, 50*l.*; Plumstead, St. Alban, Kent, 50*l.*; Primrose Hill, St. Matthew, near Rashcliffe, Huddersfield, 50*l.*; and Twerton Hill, near Bath, 25*l.* The following grants were also paid for works completed:—Weston-super-Mare, All Saints, 240*l.*; Blackham, All Saints, near Withyam, Tunbridge Wells, 40*l.*; Stourton Caundle Parish Church, near Sherborne, Dorset, 25*l.*; Princetown, St. Michael, Devon, 60*l.*; and Addiscombe, St. Martin, Croydon, 50*l.* on account of a grant of 80*l.* In addition to this the sum of 220*l.* was paid towards the repairs of eleven churches from trust funds held by the Society. The Society likewise accepted the trust of a sum of money as a repair fund for the Church of St. Mary and All Saints, Palfrey, near Walsall, Staffs.

POLICE-COURT EXTENSIONS, BRISTOL.—An inquiry was held at the Council House on the 16th inst. by Mr. H. Percy Boulnois, Inspector of the Local Government Board, into applications made by the Bristol Town Council for sanction to borrow 400*l.* for purposes of street improvement, 18,117*l.* for extensions of the petty sessional courts in Bridewell-street, and 7,605*l.* for the purchase of premises in Bridewell-street as a site for police offices.

ADMIRALTY BUILDINGS ARBITRATION CASE.—At the Surveyors' Institution, on the 18th inst., Mr. E. A. Gruning, sitting as arbitrator, resumed the hearing of the claim made against H.M. Office of Works by Messrs. Chessum & Sons, the contractors for the new Admiralty buildings, with respect to certain work over and above that specified in their contract which they alleged they had been called upon to do. The work in question had reference to the foundations for the new buildings and the underpinning and shoring up of the old buildings, all of which were stated to have been taken considerably below the contract depth. Mr. Cripps, K.C., and Mr. Hudson appeared for Messrs. Chessum, and Sir R. Finlay (Attorney-General) and Mr. Askwith for the Office of Works. Sir Benjamin Baker said the underpinning work was done in a very unusual way, involving enormous extra cost. The subsoil should have been pumped clear of water, and the work then proceeded with. The Attorney-General, on behalf of the Office of Works, said the effect of the claim would be to get rid of the contract altogether. The architect and the clerk of the works were alleged to have ordered many things which they never ordered at all, or, if directions were given with regard to them, were treated as being within the terms of the contract. As for the mode of carrying out the work in the first instance, he submitted that to clear the subsoil of water, as Sir Benjamin Baker had suggested, would have been to incur a risk that no architect would be justified in incurring. He admitted that the contractors were entitled to some additional payment for the extra pumping and piling below contract level. The inquiry was again adjourned.

UNIVERSITY COLLEGE HOSPITAL.—We are requested to state that the appointment of Mr. Hornblower as architect to University College Hospital, recently announced in the architectural journals, is not connected with the completion of the new buildings now in course of erection from the design of Mr. Alfred Waterhouse, R.A. On the retirement of Mr. Waterhouse in April last, Mr. Paul Waterhouse was appointed by resolution of the Hospital Committee to carry these important buildings through to their completion, a selection which was confirmed by Sir J. Blundell Maple, Bart., M.P., the donor of the entire fabric.

"THE SCIENTIFIC ROLL."—It is difficult to classify this publication. Its full title is "The Scientific Roll and Magazine of Systematised Notes: Conducted by Alexander Ramsay." The issue for May, 1902, is No. 5, Vol. I., and the reader is informed that the number of subscribers is now fifty-five, and that, when these have increased to 200, the work will be issued monthly. The subject of bacteria occupies the whole of the May number, and (as far as we can gather) of all the preceding issues. Each number contains thirty-two pages of notes or abstract of books, pamphlets, &c., arranged in annual groups according to the year of publication, those in each group being placed in the alphabetical order of the authors' names. There

is thus no classification of any value, but a good index may perhaps be contemplated. Of the thirty-two pages in this number, no fewer than twenty-three are occupied by a summary of Mr. R. T. Hewlett's work, and deal principally with the apparatus required by the bacteriologist and with the preparation of culture media. Judging from the May number, we believe that the compiler is chiefly interested in the bacteria present in vegetable foodstuffs and farm produce. There is little or nothing about the disease germs which affect human beings, and nothing at all about the changes which bacteria effect in sewage. The scope of the work is therefore limited.

LEGAL.

NEGLECT TO GIVE NOTICE TO DISTRICT SURVEYOR.

A SUMMONS was heard at the Clerkenwell Police-court before Mr. Bros., on the 11th inst., against Mr. A. Kendall, builder, of 30, Bloomfield-road, Bardett-road, E., for having built an addition to a factory in Great Sutton-street, Clerkenwell, without first having given the District Surveyor notice as required by the London Building Act.

The defendant contended he was not the builder, because, although he found the labour, he did not supply all the materials. He also said the owner had undertaken to give the notice, and that, therefore, he was not answerable for the omission. The magistrate fined him 20*s.* and 22*s.* costs.

THE SALE OF NEW INN TO THE LONDON COUNTY COUNCIL.

MR. JUSTICE FARWELL, in the Chancery Division, on the 22nd inst., heard a petition by the Trustees of the Middle Temple as to the appropriation of the sum of money paid by the London County Council for the sale of New Inn for the purposes of the new thoroughfare between Holborn and the Strand. It appeared that in the year 1745 the Inn was leased by the Trustees of the Middle Temple to the Treasurer and ancients of New Inn for the term of 300 years at the annual rent of 4*l.* At the time when the London County Council (Improvements) Act, 1899, was before Parliament, an arrangement was come to between the Societies of the Middle Temple and New Inn that, subject to the life or other interests of the ancients of New Inn in chambers held by them, and to the occupation leases of tenants, the fee simple in possession of the Inn should be sold to the County Council, and that the purchase money should, after payment of costs, charges, and expenses of the parties to the agreement, up to the sum of 150,000*l.*, be divided in ascertained proportions between the Middle Temple and New Inn. Subsequently, after the Act was passed, it was agreed between the two Societies that the life interests of the ancients of the Inn in the chambers held by them, including their claims for compensation for disturbance and removal, should be included in the sale to the County Council, and that they should receive for the same the sum of 26,000*l.* After the County Council had served notices to treat for the acquisition of the Inn, it was agreed between the Middle Temple, New Inn, and the ancients on the one side, and the County Council on the other, that the amount to be paid by the County Council for compensation should be 157,500*l.* The Attorney-General in August, 1901, started an action at the relation of the Incorporated Law Society against the Treasurer and ancients of New Inn, asking for a declaration that a certain amount of the purchase money paid by the County Council as compensation for the purchase of the Inn as might be allotted and apportioned to the Society of New Inn, was a charitable or public fund to be applied for the purposes of legal education, and that a scheme for its regulation and management might be settled by the Court. It was proposed that the whole of the money should be put into Messrs. Child's bank, and the purchase effected according to the provisions of Section 53 of the London County Council (Improvements) Act, 1889, but the County Council declined to do this on the ground that the title to the Inn to sell the leasehold interest under the lease of 1745 was not satisfactorily made out. Accordingly the County Council, with the consent of the Middle Temple and of New Inn, purchased from the ancients collectively their life interests, including compensation for disturbance, for 26,000*l.*, and also agreed to purchase from the Societies of the Middle Temple and New Inn their respective interests for 131,500*l.*, and the County Council paid that sum into court. The Trustees of the Middle Temple now asked for an order that this money should be paid out to the respective claimants in the shares mentioned in the schedule.

In the result, Mr. Justice Farwell made the order as asked for.

Mr. Warmington, K.C., Mr. Badcock, K.C., Mr. Dauncy, and Mr. J. Henderson appeared for the Trustees of the Middle Temple; Mr. M. J. Parker for the Attorney-General; Mr. Christopher James for the Trustees of New Inn; Mr. F. Thomson for the London County Council; and Mr. T. T. Methold for the Incorporated Law Society.

RECENT PATENTS:

ABSTRACTS OF PATENTED INVENTIONS.

5,952.—COVERS FOR JOINT BOXES, SWITCHES, CUT-OUTS, &C.: *H. Hirst and T. H. Bacon.*—A water-tight cover is made up of two discs, having a layer of rubber or some such substance, which is compressed with a screw, interposed between them. In another shape the cover has a projecting lid, and a set of screws is used to compress an india-rubber packing-ring inserted into the space above another ring.

5,970.—AN APPLIANCE FOR FILTERING AIR: *S. Timokhowitch.*—For ventilating rooms and buildings is devised a filter, which comprises a wire frame on which is stretched swansdown or some similar material, and adapted so as to form part of a cornice or of a double ceiling. The filter can also be applied to a flap-valve box, which is adjusted to a window-pane.

5,984 — A TESTING APPARATUS FOR FIRE-ALARMS: *G. H. Oatway.*—For breaking a closed circuit the inventor attaches one end of a stretched wire to the edge of a disc. When the disc is pulled round with a cord the wire will assume the same amount of sag as that which a fire would produce, and so break or close the electrical alarm circuit. By the arrangement described the insulating-rod joined to the wire will be lowered until the platinum contact-pieces become separated from the terminals. For a circuit-closing apparatus, contact may be effected through the differential movement of levers and pulleys which increases the virtual length of the hanging-wire. Confer also No. 23,018 of 1900.

6,026.—IMPROVEMENTS IN PLUG-COCKS: *S. F. Tangay and H. F. A. Edmonds.*—In order to minimise leakage by the provision of an increased area of plug surface, an inclined bore is fashioned in the plug-cock so as to fit with corresponding passages in the casing of the tap or valve.

6,058.—A PROTECTIVE AND WATERPROOFING COMPOUND: *C. L. V. Zimmer.*—A coating for surfaces of stone, wood, metal, and so on, consists of three or four parts of cotton-seed oil, one part of bitumen, and enough of caustic soda in solution to saponify the glycerides, raised gradually to about 200 deg. C., and then aerated. Other fats or oils, treated with sulphur or alkalies, and then with some bituminous substance, and afterwards heated, may be employed, with suitable solvents such as oil of turpentine or light tar oil. The compound is described as being capable of resisting the action of acids, alkalies, and fire, as well as of water.

6,107.—ELECTRICITY METERS: *A. C. Heap and W. O. Smith.*—For an instrument which has a coil that turns relatively to a stationary coil the latter coil is fashioned so as to be almost spherical externally, whilst the movable coil constitutes a ring that closely surrounds it. An instrument which will avail for measuring in amperes, volts, or watts, and for use with integrating or recording apparatus, has its stationary coil mounted upon a cylinder of ebonite that is held in a horizontal yoke carried by an arm of the base, the pivots of the movable coil turn in jewelled bearings, the coil has a pointer, three screw-threaded arms fitted with counter-weights, and a conductive disc. The movement of the coil is checked with springs, the disc will move in the fields of permanent magnets which will make the instrument dead-beat, the magnets being shielded with a copper plate when it is employed with alternating currents.

6,115.—HOUSE CONSTRUCTION: *J. A. Brodie.*—For the expeditious building of houses to meet the more immediate needs of the poor or the dispossessed, large sections or slabs are moulded in concrete with interlocking grooves and tenons, and may be strengthened with tie-rods and ribs, girders, expanded metal, &c. The ground-floor slabs are laid upon wall-footings, and the lower wall sections have ledges that carry the first-floor slabs. Concrete steps are fashioned in one piece with a side wall, and are supported by a rib of the other side wall. The flues consist of fireclay pipes embedded in the concrete, and chimney-breasts are moulded in one piece with wall slabs. The specification extends to a mould for making slabs with openings and projections for windows, doors, and so on, and for the openings are adopted plates, bars, and tapered cores attached to sheet-metal sides which are clamped on to channel-iron bars.

6,183.—JOINTING FOR SANITARY AND OTHER PIPES: *C. Lewis.*—A chair, having annular spaces and made of cement, fireclay, concrete, iron, &c., is devised for carrying the spigot end and the socket end of two pipes. Cement is filled in one of the spaces for making the lower portion of the joint, whilst the upper portion is made by attaching covers to the top having a section similar to that of the chair which will supply a firm bedding for the pipes.

6,199.—STRUCTURES OF IRON OR STEEL AND CONCRETE COMBINED: *G. E. Clare.*—The corners of the building are strengthened with angle-ties; corrugated vertical steel plates are tenoned to damp-proof base plates, and to wooden wall plates; corrugated and tongued plates are adopted for the windows, door sills, and lintels, and are inserted through slots in the vertical plates, and secured with tapered pins; corrugated plates, tie-rods (of which the lengths are adjusted with screwed sockets), and interlaced wire or expanded metal serve to strengthen the floors and walls. Slotted bolts and tapered pins fasten the centreing planks or sheet-metal moulding plates to one another. Confer also No. 22,511, of 1899.

6,220. — HEADS OF AUTOMATICAL FIRE-SPRINKLERS: *F. C. Merryweather and C. F. W. Fakeman.*—The inventors make a strut for sustaining the valve, which is composed of two bell-crank portions having their horizontal ends joined and soldered together between two discs. A joint is formed, and the collapse of the strut is facilitated when the solder becomes melted by heat, by means of the insertion of a ball between the two bell-crank extensions.

6,223.—LADDER-SECTIONS: *F. Charman.*—The sections can be extended in a straight line by means of pivots inserted through hinge-plates, or can be jointed together so as to form a trestle or step-ladder, or to be folded for transport, by means of hooks set to engage with eyes. One plate of each pair of hinges has a flange, and is turned around the edge of one side of a section. For use by painters, window-cleaners, and other workmen, a tapered strut, pivoted to the sides, is to be fastened to one of the rounds with hooks, and has a groove to take the window stile or rail, &c. which keeps the ladder in its place.

6,235-6.—CHIMNEYS AND THEIR LININGS: *A. Custodis.*—Channels that communicate with the outer air and, by means of ducts, with the flue are provided by building up the linings in sections that repose upon interior corbels. For building round chimneys are employed blocks which have vertical openings and are laid in either one row, or two or more concentrical rows, in accordance with the level of the structure.

6,241.—A FIREPROOF COMPOUND FOR CONSTRUCTIONAL WORK OF IRON: *I. Koslowsky.*—After the iron-work has been coated with a solution of alum, borax, sodium tungstate, and ammonium, magnesium, and ferrous sulphates in water, it is treated with a paste made up of a further supply of that coating with the addition thereto of sodium, silicate, woodash, chalk, and asbestos.

6,270.—TREATMENT OF SEWAGE: *F. Merrill.*—The flow of sewage in bacteria beds is regulated by an apparatus which includes a supply channel directed into a receiver, and having an orifice for the charging of the tank. When the tank is filled, the orifice will be automatically shut as the sewage continues to flow into a container, wherein it lifts a float which is joined to an axially-mounted vessel so set as to close the opening. In another form the float itself carries the closing vessel. By these means a set of beds may be filled in turn, the overflow from the tank is conveyed into a receiver and so up a tube into a tilting bucket which, when filled, will be discharged. As the sewage escapes through a trap, it works a siphon, and so empties the float chamber of the adjoining bed.

6,312.—FLUSHING APPARATUS: *H. L. Doulton.*—The chamber of a regulator-valve contains a double piston, a time-passage communicates from the supply-pipe to the upper end of the chamber to which a pressure-relieving valve is attached, a short cylinder takes the lower portion of the piston. When a flush is required the pressure over the pistons is relieved by the working of the relief-valve. The rising of the pistons opens the flushing valve, which will then be shut by the flow of water to the top of the chamber. The flush may be caused to exhaust a space between the two traps of a siphon closet, and provision is made for an after-flush.

6,341. — IMPROVEMENTS IN PILES: *Vereinigte Maschinenfabrik Augsburg und Maschinenbaugesellschaft Nurnberg A. G.*—A thin tube around the pile is joined firmly to an intermediate piece which at first is attached with light pins to the shoe of the pile. When the tube has been driven home an inner iron support is thrust in so that its end shall bear against the shoe. When that support has been rammed down it will move through the tube with the breaking of the light pins. A washer on the flange of the intervening piece prevents water from entering the space between the thin tube and the iron support, and beton is filled into the space.

6,382.—WATER SUPPLY IN LAVATORIES, &C.: *F. Buley.*—The inlets of the hot and cold water-supply box have regulating valves, of which the spindles lie upon pivoted levers, cams upon a cross-shaft work the levers, and on turning the shaft one obtains a supply of hot, cold, or tepid water. In a variant form a single cam serves for working both of the two valve stems.

6,414.—AN AIR INLET VALVE FOR DRAINS AND SEWERS: *E. B. A. Barnett.*—The inlet of a valve to be fitted at the top of a ventilating shaft for a drain or sewer is protected with an inclined grating, and around it is fashioned a channel which when filled with sand and glycerine will form a seal for a dished disc which a balance-weight in the shape of a plate maintains, normally, in the opened position; the valve will be closed, however, by the pressure of any back-draught upon the plate; a forked lever having two cups for its fulcrums, carries the valve.

6,421.—A CONTRIVANCE FOR CLOSET-TRAPS: *H. Smith.*—The invention is intended for a system wherein several basins are connected to one and the same soil-pipe. In order to prevent unsealing, an air-chamber is formed in the crown of the trap.

6,479.—A COMBINED LEVEL AND BEVEL: *J. Robb.*—Two blades are fitted upon the rounded end

of a level, to the sides of which they are fastened with wing-nuts in such a manner as to allow of their being turned quite round. Linear and angular scales may be graduated upon the instrument, and screws provide for an adjustment of the spirit-level.

6,481.—SEWERAGE-TRAPS, &C.: *F. Butler & R. Hunt.*—In order to obviate a back-flow of sewage, the inventors insert a pivoted and swinging ball-valve in front of the inlet of the valve and against a seating. The normal current impels the ball to swing into a recess in the casing, but the valve will close upon its seating to resist any back-flow.

6,542.—DOMESTIC WATER-SUPPLY: *F. Rühling.*—The inventor seeks to provide means for warming the water-closets or other rooms of a house, and for preventing the freezing of water in the indoor service-pipes. The supply pipe is fitted with two branches, whereof one is laid through a heater in its course to the continuation of the supply pipe, and is in communication with a pipe passing into a tank within the heater; thus steam can be conveyed into a coil of warming pipes in any other room. An arrangement of valves enables a supply of water, either directly to the taps or, in times of cold weather, through the branch inside the heater. A safety-valve and a level-indicator are fitted on to the tank.

6,570.—HOT AND COLD WATER SUPPLY (DOMESTIC): *T. W. Twyford.*—In order to render impossible the shutting of the cold-supply valve before that of the other, and the opening of the hot supply valve before that of the other, a pinion, in gear with a rack on which a shield is mounted, is attached to the spindle of the cold-supply valve, the shield, which is set so as to normally shut the keyhole of the hot-supply valve, will be removed with the opening of the cold-supply valve, and so bring the hot-supply valve into play; one cannot shut the cold-supply valve until the other valve has been closed, because a spindle will have been lifted into the travel of the shield by the opening of the hot-supply valve.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

July 8.—By HATCH, WATERMAN, & SON (at Ashford).

High Halden Windmill, house, and 3 a. 1 r. 23 p., f.	£310
Tenterden, Kent.—Two freehold cottages, w.r. 13*l.*	130
Enclosures of land, 69 a. 3 r. 36 p., f.	1,600
Skeere's House and two cottages adjoining, f.	255
Skeere's Field, 3 a. 3 r. 35 p., f.	140
Two freehold residences	520
Woodchurch, Kent.—Cottage, orchard, and 0 a. 0 r. 26 p., f.	130

July 12.—By FENN & CO. (at Colchester).

West Mersea, Essex.—The Firs farm, 108 a. 2 r. 34 p., f.	5,000
Freehold cottage and 3 a. 2 r. 12 p.	320
Spring Field, 5 a. 3 r. 35 p., f.	610
Carter's Field and cottage adjoining, 6 a. 2 r. 36 p., f.	320

By F. PITTIS & SON (at Newport).

Wroxall, Isle of Wight.—Moncrieff Farm, 109 a. 3 r. 29 p., f.	4,500
Wroxall Cross Farm, 370 a. 3 r. 13 p., f.	10,500
Myrtle Cottage and 1 a. 3 r. 27 p., f.	300
Clarence-road, three freehold cottages	250
Manor-rd., Malmesbury Cottages (two), f.	440
Newchurch, Isle of Wight.—Parsonage Farm, 81 a. 0 r. 35 p., f.	2,800

By SEWELL, BARNES, & BREERTON (at Norwich).

Pulham St. Mary-the-Virgin, Norfolk.—The Church Farm, 174 a. 0 r. 17 p., f.	2,070
Pulham St. Mary Magdalen, Norfolk.—Bassingthwaite's Farm, 130 a. 2 r. 29 p., f. and c.	1,275

July 14.—By BATE & CO.

St. John's Wood.—Belgrave-rd., Belgrave Lodge, u.t. 48 yrs., g.r. 6*l.* 6s., w.r. 65*l.*	320
Paddington.—61, Hall-pl. (S), u.t. 36 yrs., g.r. 7*l.* 7s., w.r. 54*l.* 12s.	350
Notting Hill.—30, Golbourne-rd. (S), u.t. 63 yrs., g.r. 9*l.*, w.r. 65*l.*	500

By ALLAN BOOTH.

Holloway.—32, Carleton-rd., u.t. 60 yrs., g.r. 15*l.*, p.	1,575
Camden Town.—193, Camden-rd., u.t. 36 yrs., g.r. 6*l.* 5s., p.	680

By BUCKLAND & SONS.

Slough, Bucks.—Bath-rd., freehold building land, 12 a., p.	7,000
Winkfield, Berks.—Box Farm, 29 a. 2 r. 33 p., f. (in lots)	4,685
Farnham Royal, Bucks.—High-rd., freehold building site, 6 a.	1,850

By H. J. CHEFFINS.

Linton.—Camba.—Five acres enclosure, 5 a. 2 r. 3 p., f.	225
Two plots of grass land, 1 a. 1 r. 30 p., f.	150
Three freehold fields, 4 a. 1 r. 6 p.	235

By FISHER, STANHOPE & DRAKE.

Stoke Newington.—119, Lordship-rd., u.t. 72½ yrs., g.r. 10*l.*, e.r. 75*l.*	815

By KING & CHASEMORE.

Ewhurst, Surrey.—Mascall's Farm, 37 a. 1 r. 1 p., f.	1,600
Horsham, Sussex.—Lanaway's Cottages (two) and 6 a. 2 r. 25 p., f.	500
Nuthourne, Sussex.—Furlongs homestead and 9 a. 1 r. 3 p., f.	420
Freehold cottage residence, y.r. 15*l.*	460

By T. W. OFFIN.

Battlebury, Essex.—Pond Mead, 5 a. 0 r. 8 p., f.	350
Great Burstead, Essex.—Two enclosures, 5 a. 2 r. 31 p., f.	330

By WEATHERALL & GREEN.

Finsbury.—21 to 31 (odd), Earl-st., area 4,900 ft., f., y.r. 256*l.*	4,600

By MESSRS. BALLS (at Clare).

Clare, Suffolk.—Church Farm, 111 a. 3 r. 10 p., f.	2,070
Bench Barn Farm, 155 a. 0 r. 1 p., f.	1,570
The Leys Farm, 164 a. 2 r. 36 p., f.	1,660
Chilton Field, &c., 19 a. 3 r. 29 p., f.	400
High-st., a freehold house	370
High st., three residences with engineering premises adjoining, f.	780
Nethergate-st., Clare House, f.	650
Bridewell-st., six freehold cottages.	330
Little Wrapping, Suffolk.—Allotment field, 4 a. 2 r. 0 p., f.	120
Freehold cottage and 1 acre	100

By P. M. PUCKRIDGE (at Swindon).

Wootton Bassett, Wilts.—Lower Greenhill Farm, 142 a. 3 r. 11 p., f., y.r. 220*l.*	4,250

July 15.—By DAVID BURNETT & CO.

Edmonton.—46, Grosvenor-rd. (S.), f., y.r. 32*l.*	300

By DERENHAM, TEWSON & CO.

City of London.—178, Upper Thames-st., f. y.r. 145*l.*	3,000

By ALFRED RICHARDS.

Ponder's End.—Hertford-rd., part of the Westfield Estate, 16 a. 0 r. 32 p., f., p.	4,500
Kensington.—North End-rd., the Clarence Hotel, an improved rental of 120*l.*, for 63 yrs.	2,400
Tottenham.—200, High-rd., f., p.	950

By NOTLEY & CO.

Pimlico.—12, Hanover-st., u.t. 31 yrs., g.r. 6*l.*, e.r. 45*l.*	415

By F. C. SQUIRE & CO.

Sydenham.—104, Sydenham-rd., f., y.r. 36*l.*	605
106, Sydenham-rd. (S), f., y.r. 40*l.*	855
108 to 114 (even), Sydenham-rd. (S), f., y.r. 94*l.*	1,100
Sydenham-rd., plot of building land, area 28 poles, with stabling and erections thereon, f., y r. 28*l.*	330

By JOSEPH STOWER.

Stoke Newington.—23, Mildmay-gr., u.t. 59 yrs., g.r. 7*l.*, y.r. 34*l.*	370
Kilburn.—89, Carlton-vale (S), u.t. 62 yrs., g.r. 7*l.*, y.r. 50*l.*	500
Brighton.—80, Grand-parade, f., y.r. 90*l.*	1,750
Hackney.—12, Lower Clapton-rd., f., y.r. 50*l.*	1,000
Walthamstow.—Blackhorse-lane, corner plot of building land, area 7,000 ft., f.	450
Blackhorse-lane, freehold cottage and 1 r. 7 p., y.r. 30 *l.*	450

By SURRIDGE & SON (at Ipswich).

Haughley, Suffolk.—The Mere Farm, 129 a. 3 r. 1 p., f., y.r. 110*l.*	1,500

By MORRIS, MARSHALL, & POOLE (at Newtown).

Newtown, Montgomery.—Black Hall Farm, 158 a. 0 r. 4 p., f.	4,675
Cil Haul Villa, two cottages and 4 a. 1 r. 27 p., f.	575
Caehillin Farm, 142 a. 2 r. 21 p., f.	1,800
The Dingle Cottage and 3 a. 1 r. 23 p., f.	330
Llandinam, Montgomery.—The Moat Farm, 236 a. 1 r. f.	3,100
Llanwnog, Montgomery.—Gilfach Farm, 224 a. 1 r. 25 p., f.	2,500
Oerffrwydd Farm, 179 a. 3 r. 25 p., f.	2,000
Brynculfa Hill land, 19 a. 0 r. 31 p., f.	105

By FLEURET, SONS, & ADAMS (at Masons' Hall Tavern).

Stamford Hill.—Seven Sisters-rd., the Woodbury Hotel, u.t. 55½ yrs., g.r. 108*l.* 8s., with goodwill	39,600
City of London.—Old Change, the Crown and Sceptre p.-h., u.t. 24 yrs., y.r. 140*l.*, with goodwill	1,990

By BUCKLAND & SONS (at Slough).

Langley, Bucks.—Windsor-rd., &c., the Lea Building Estate, 32 a. 2 r. 24 p., f.	4,500
Farnham Royal, Bucks.—Beaconsfield-rd., &c., two plots of land, f.	240

July 16.—By H. DONALDSON & SON.

Dalston.—48, Queen's-road, u.t. 21 yrs., g.r. 5*l.*, e.r. 42*l.*	335

By HAROLD GRIFFIN.

Lambeth.—20 and 22, Vauxhall-walk, u.t. 19 yrs., g.r. 8*l.*, w.r. 83*l.*, 4s.	200
Battersea.—40 and 42, Wye-street, u.t. 59 yrs., g.r. 7*l.* 10s., w.r. 69*l.* 16s.	410
44, Wye-street, f., w.r. 29*l.* 18s.	305

By W. HALLETT & CO.

Notting Hill.—82, Bevington-road, u.t. 64 yrs., g.r. 7*l.*, e.r. 42*l.*	305
80, Golbourne-rd., u.t. 69 yrs., g.r. 8*l.*, y.r. 45*l.*	450

By MARK LIELL & SON.

Whitechapel-road.—No. 249 (building site), u.t. 270 years, g.r. 15*s.*, p.	720
Leyton.—12, Station-rd., u.t. 75 yrs., g.r. 6*l.*, e.r. 35*l.*	220
Forest Gate.—179, Earlham-grove, f., e.r. 65*l.*	775

By MULLETT, BOOKER, & CO.

Hyde Park.—28, Cambridge-square, u.t. 33½ yrs., g.r. 28*l.*, p.	2,500

By RUTLEY, SON, & VINE.

Euston-rd.—1, 2, and 3, Diana-pl., f., y.r. 98*l.*	1,760
Holloway.—38, Grove-rd. (S), u.t. 47 yrs., g.r. 8*l.*, y.r. 40*l.*	365
Finsbury Park.—16 and 18, Osborne-grove, u.t. 64½ yrs., g.r. 10*l.* 10s., y.r. 64*l.*	610

By SEDGWICK, SON, & WEALL.

Eastcote, Middlesex.—Field End House and 91 a. 0 r. 24 p., f., p.	6,200
Field End-rd., Freehold-cot., w.r. 6*l.* 10s.	250
1 to 8, Field End-villas, f., y.r. 176*l.*	3,160

By HUMBERT & FLINT.

Leysdown, Isle of Sheppey.—Vicarial Redeemed Land Tax of 6*l.* 8s.	125
Whitfield, Kent.—Archer's Court Estate, 161 a. 2 r. 35 p., f.	3,100
A freehold building estate, 66 a. 3 r. 22 p.	1,800
Enclosures of land, 4 a. 0 r. 14 p., f.	160
Parsonage Farm, 43 a. 1 r. 8 p., f.	1,150
Church Farm, 60 a. 2 r. 6 p., f.	1,100
Ickham, Kent.—Bay House and 1 a. 1 r. 37 p., f., y.r. 35*l.*	750
Bay Lands Hop Garden, 21 a. 0 r. 31 p., f.	1,550
Bramlin-rd., 2 cottages and 0 a. 1 r. 5 p., f., y.r. 12*l.*	275
Herne Bay, Kent.—Broomfield, 2 cottages and 0 a. 0 r. 38 p., f., y.r. 14*l.*	250
Herne, Kent.—Little Ruckinge Grove, &c., enclosures, 107 a. 2 r. 21 p., f.	2,550
Hernhill, Kent.—Waterham Farm, 128 a. 2 r. 24 p., f.	2,500
Little Waterham Farm, 44 a. 3 r. 15 p., f.	1,400
Enclosure of arable land, 13 a. 1 r. 34 p., f.	400
Milsted, Kent.—Rectory Cottage and 11 a. 1 r. 25 p., f., y.r. 22*l.*	485
Sittingbourne, Kent.—Bell-road, Glover's House and 6 a. 0 r. 6 p., f., p.	3,750
High-street, &c., f.g.r.'s 25*l.*, reversion in 9 yrs.	3,350

By P. M. PUCKRIDGE (at Bath).

Wellow, &c., Somerset.—The Hassage Estate, 332 a. 2 r. 22 p., f.	4,500
Townsend Enclosure, 4 a. 2 r. 7 p., f.	115

By FLEURET, SONS, & ADAMS (at Masons' Hall Tavern).

Commercial-road East.—Nos. 416, 418, and 420, also 49, Havering-street, u.t. 20½ yrs., g.r. 30*l.*, y.r. 187*l.* 10s.	1,360

By HUSSEY & SON (at Holsworthy).

Black Torrington, Devon.—Lana and Forda Farm and Garlands Moor, 419 a. 2 r. 31 p., f.	3,310
Six cottages, also coach-house and stable, f.	180

By SHINTER & WINTER (at Yatton).

Wrington, Somerset.—Nutscale, otherwise Cowslip House, and 8 a. 3 r. 18 p., f.	1,725
Paradise Farm, 121 a. 1 r. 39 p., f.	4,250
Hailstones Farm, 131 a. 2 r. 15 p., f.	2,300
Corner Pool Cottages (four) and 1 a. 0 r. 4 p., f.	620

By SEWELL, BARNES, & BREERTON (at Harleston).

Weybread, &c., Suffolk.—Leftley's Farm, 100 a. 3 r. 38 p., f.	1,000
Weybread, Suffolk.—Impropriate tithe rent charge of 21*l.*	320
Wilby, Suffolk.—Prospect Farm, 62 a. 1 r. 10 p., f.	775

July 17.—By H. J. BROMLEY.

Penge.—13, Beckenham-rd. (S), u.t. 73 yrs., g.r. 15*l.*, e.r. 60*l.*	360

By ELDRIDGE, SONS, & CO.

Penge.—Croydon-rd., f.g.r.'s 20*l.*, reversion in 95 yrs.	520

By E. W. HARRIS.

Beckenham.—17, Barnmede-rd., u.t. 80 yrs., g.r. 8*l.*, y.r. 52*l.*	550

By C. C. & T. MOORE.

Stratford.—4 and 6, Earl-st., f., w.r. 57*l.* 4s.	500
Wanstead.—1 to 6, Easts-cottages, u.t. 58 yrs., g.r. 10*l.*, w.r. 98*l.* 16s.	570
Forest Gate.—61 to 67 (odd), Tower Hamlets-rd., u.t. 57½ yrs., g.r. 10*l.*, w.r. 81*l.* 18s.	390
Plaistow.—10 and 11, Alma-terrace, u.t. 65 yrs., g.r. 5*l.*, w.r. 32*l.* 10s.	150
Hackney.—18, Gore-rd., u.t. 51¼ yrs., g.r. 10*l.*, y.r. 65*l.*	775
Ilford.—23, Richmond-rd., u.t. 99½ yrs., g.r. 6*l.*, e.r. 42*l.*	420
83, Grosvenor-rd., u.t. 99½ yrs., g.r. 4*l.* 4s., y.r. 24*l.*	255

By NEWBON, EDWARDS, & SHEPHARD.

Hampstead.—Lambolle-rd., l.g. rents 50*l.*, u.t. 61 yrs., g.r. 1*l.*	990
Muswell Hill.—Palace Terrace, f.g.r.s 30*l.*, reversion in 81 yrs.	615
Canonbury.—24, St. Mary's-rd., u.t. 43 yrs., g.r. 10*l.*, e.r. 90*l.*	700
Caledonian-rd.—Nos. 165 and 167 (S), u.t. 38 yrs., g.r. 50*l.*, y.r. 160*l.*	1,190
No. 189 (S), u.t. 38 yrs., g.r. 25*l.*, y r. 80*l.*	555
Fulham.—274, 276, and 278, North End-rd. (S), f., y.r. 88*l.* 8s.	860
8 and 10, Coomer-rd., f., w.r. 67*l.* 12s.	700

By INMAN SHARP, HARRINGTON, & ROBERTS.

Chelsea.—14, Walpole-st., u.t. 38 yrs., g.r. 1*l.*, y.r. 65*l.*	960
3, Markham-sq., u.t. 20½ yrs., g.r. 7*l.* 10s., y.r. 55*l.*	395

By ALFRED SQUIRE.

Holloway.—32a and 32b, Eden-grove, u.t. 64 yrs., g.r. 9*l.*, y.r. 158*l.* 12s.	1,680
8, Grove-st.: also the Norfolk Arms b.-h., adjoining, u.t. 55 yrs., g.r. 10*l.*, y.r. 55*l.*	960

By STIMSON & SONS.

Lambeth.—140 and 142, Lambeth-rd., f., y.r. 72*l.*	1,005
152, Lambeth-rd., f., q.r. 6*l.*	800
174, Lambeth-rd., f., y.r. 52*l.* 10s.	800
58 and 59, York-st., f., y.r. 90*l.*	1,370
York-st., f.g r. 10*l.*, reversion in 52 yrs.	380
65, York-st., u.t. 21 yrs., g.r. 6*l.* 10s., q.r. 45*l.*	400
Clapham Common.—61, The Chase, u.t. 66½ yrs., g.r. 12*l.*, y.r. 50*l.*	420
Wood Green.—3, Granville-rd., e.r. 30*l.*; also corner plot of land in rear, f.	455
Croydon.—13 to 23, Union-st., u.t. 83 yrs., g.r. 52*l.* 10s., w.r. 193*l.* 14s.	830
Bloomsbury.—21, Mecklenburgh-sq., u.t. 7 yrs., g.r. 7*l.* 7s., y.r. 115*l.*	420

By HENRY MANLEY & SONS (at Crewe).

Nantwich, Cheshire.—The Brine Baths Hotel, Brine Baths, and Shrewbridge Hall Farm, 68 a. 2 r. 33 p., f.	15,500
Wellington-rd., freehold stables, coach-house, and land, area 1,977 yds.	1,500

By CASTLE, SON, & BOOTH (at Banbury).

Greatworth, &c., Northants.—The Greatworth Hall Estate, 289 a. 3 r. 15 p., f.	6,500

July 18.—By R. A. ENRIGHT.

Anerley.—127 to 141 (odd), Croydon-rd., u.t. 95 yrs., g.r. 7*l.*, e.r. 40*l.*	3,610

By J. H. MELLENFIELD.

Weybridge, Surrey.—Dorchester-rd., Norfolk House, f., y.r. 42*l.*	725

By SCORELL & LAKE.

Chertsey, Surrey.—Guildford-st., Burwood House and 4 a. 0 r. 29 p., f., y.r. 114*l.*	2,280
84 and 86, Guildford-st. (S), f., w.r. 32*l.* 10s.	250

By TURTLE & APPLETON.

Wandsworth.—25, Bolingbroke-grove, f., e.r. 110*l.*	1,700

By FRED VARLEY & SONS.

Finsbury Park.—142, Tollington-pk., u.t. 61 yrs., g.r. 2*l.* 2s., e.r. 70*l.*	675
Highbury.—34, Sotheby-rd., u.t. 86 yrs., g.r. 8*l.* 10s., e.r. 60*l.*	565

By WINDRUM & CLEAVE.

Bow.—43 to 69 (odd), Sherwood-st., u.t. 62 yrs., g.r. 44*l.* 10s. 8d., w.r. 413*l.* 8s.	2,550
Limehouse.—11, 13, 13a, 15 and 17, Beccles-st., f., w.r. 68*l.* 18s.	755
Poplar.—111, St. Leonard's-rd. (S), u.t. 37 yrs., g.r. 2*l.* 10s., y.r. 36*l.*	320
287 and 289, Manchester-rd., u.t. 48½ yrs., g.r. 10*l.*, w.r. 57*l.* 4s.	275

By A. J. SHEFFIELD.

Poplar.—1 and 3, Fortree-st., u.t. 71 yrs., g.r. 8*l.* 10s., w.r. 62*l.* 8s.	500

Barking.—119 and 121, Fanshawe-av., f., w.r. 44*l.* 4*s.* 460
Ramsgate, Kent. — Margate-rd., Summerhill (Ramsgate College) and 2 acres, f., e.r. 100*l.* 2,125
Enfield Highway.—Ordnance-rd., corner plot of land, f. 400

By HERRING, SON, & DAW.

Caterham, Surrey.—Tupwood-lane, Liskeard, and 2a. 2r. 26p., f., p. 3,000

Contractions used in these lists.—*F.g.r.* for freehold ground-rent; *l.g.r.* for leasehold ground-rent; *i.g.r.* for improved ground-rent; *g.r.* for ground-rent; *r.* for rent; *f.* for freehold; *c.* for copyhold; *l.* for leasehold; *e.* for estimated rental; *w.r.* for weekly rental; *y.r.* for yearly rental; *u.t.* for unexpired term; *p.a.* for per annum; *yrs.* for years; *st.* for street; *rd.* for road; *sq.* for square; *pl.* for place; *ter.* for terrace; *cres.* for crescent; *av.* for avenue; *gdns.* for gardens; *yd.* for yard.

MEETINGS.

SATURDAY, JULY 26.

Architectural Association.—Fourth summer visit, to view church and monastery of St. Francis, Bocking Bridge, Essex, by the late Mr. J. F. Bentley.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.	
Hard Stocks	1 13 0	per 1,000 alongside, in river
Rough Stocks and Grizzles	1 10 0	,, ,, ,,
Facing Stocks	2 12 0	,, ,, ,,
Shippers	2 7 0	,, ,, ,,
Flettons	1 8 0	,, at railway depôt.
Red Wire Cuts ..	1 12 0	,, ,, ,,
Best Fareham Red	3 12 0	,, ,, ,,
Best Red Pressed Ruabon Facing.	5 5 0	,, ,, ,,
Best Blue Pressed Staffordshire ..	4 6 6	,, ,, ,,
Do., Bullnose	4 11 0	,, ,, ,,
Best Stourbridge Fire Bricks	4 6 0	,, ,, ,,
GLAZED BRICKS		
Best White and Ivory Glazed Stretchers	13 0 0	,, ,, ,,
Headers	12 0 0	,, ,, ,,
Quoins, Bullnose, and Flats	17 0 0	,, ,, ,,
Double Stretchers	19 0 0	,, ,, ,,
Double Headers..	16 0 0	,, ,, ,,
One Side and two Ends	19 0 0	,, ,, ,,
Two Sides and one End	20 0 0	,, ,, ,,
Splays, Chamfered, Squints.....	20 0 0	,, ,, ,,
Best Dipped Salt Glazed Stretchers and Headers ..	12 0 0	,, ,, ,,
Quoins, Bullnose, and Flats	14 0 0	,, ,, ,,
Double Stretchers	15 0 0	,, ,, ,,
Double Headers..	14 0 0	,, ,, ,,
One Side and two Ends	15 0 0	,, ,, ,,
Two Sides and one End	15 0 0	,, ,, ,,
Splays, Chamfered, Squints.....	14 0 0	,, ,, ,,
Seconds Quality White and Dipped Salt Glazed....	8 0 0	,, less than best.
Thames and Pit Sand	7 3	per yard, delivered.
Thames Ballast	6 0	,, ,,
Best Portland Cement	31 0	per ton, delivered.
Best Ground Blue Lias Lime..	25 0	,, ,,

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime..... 10*s.* 6*d.* per yard, delivered.
Stourbridge Fire-clay in sacks, 26*s.* 6*d.* per ton at rly. dpt.

STONE.

	s. d.	
Ancaster in blocks	1 11	per ft. cube, deld. rly. depot
Bath ,, ...	1 7	,, ,,
Farleigh Down Bath ..	1 8	,, ,,
Beer in blocks	1 6	,, ,,
Grinshill ,, ...	1 10	,, ,,
Brown Portland in blocks	2 2	,, ,,
Darley Dale in blocks..	2 4	,, ,,
Red Corsehill ,,	2 5	,, ,,
Closeburn Red Freestone	2 3	,, ,,
Red Mansfield ,,	2 4	,, ,,
Hard York in blocks ..	2 10	,, ,,
,, ,, 6 in. sawn both sides landings, to sizes (under 40 ft. sup.)	2 8	per ft. super. at rly. depôt.
,, ,, 6 in. Rubbed Ditto..	3 0	,, ,,
,, ,, 3 in. sawn both sides slabs (random sizes)	1 3	,, ,,
,, ,, 2 in. self-faced Ditto	0 9½	,, ,,
Hopton Wood (Hard Bed) in blocks	2	3 per ft. cube. deld. rly. depôt
,, ,, ,, 6 in. sawn both sides landings	2	7 per ft. super. deld. rly. depôt.
,, ,, ,, 3 in. do.	1	2½ ,, ,,

SLATES.

in. in.	£ s. d.	
20×10 best blue Bangor..	12 0 0	per 1000 of 1200 at ry. dep
,, best seconds ,,	11 10 0	,, ,,
16×8 best ,,	6 27 6	,, ,,
20×10 best blue Portmadoc	11 7 6	,, ,,
16×8 best blue Portmadoc	6 5 0	,, ,,

PRICES CURRENT (*Continued*).

SLATES.

in. in.	£ s. d.	
20×10 best Eureka unfading green....	13 10 0	per 1000 of 1200 at rly. dep.
16×8 ,, ,,	7 10 0	,, ,,
20×10 permanent green	10 10 0	,, ,,
16×8 ,, ,,	6 0 0	,, ,,

TILES.

	s. d.	
Best plain red roofing tiles..	41 6	per 1,000, at rly. depôt.
Hip and valley tiles....	3 7	per doz. ,, ,,
Best Broseley tiles	45 6	per 1,000 ,, ,,
Hip and valley tiles....	4 0	per doz. ,, ,,
Best Ruabon Red, brown or brindled Do. (Edwards)	57 6	per 1,000 ,, ,,
Do. ornamental Do.	60 0	,, ,, ,,
Hip tiles	4 0	per doz. ,, ,,
Valley tiles	3	,, ,, ,,
Best Red or Mottled Staffordshire Do. (Peakes) .	50 0	per 1,000 ,, ,,
Hip tiles	4 1	per doz. ,, ,,
Valley tiles.....	3 8	,, ,, ,,

WOOD.

BUILDING WOOD.—YELLOW.

	At per standard. £ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.....	14 10 0	16 0 0
Deals: best 3 by 9.....	13 10 0	15 0 0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.....	10 10 0	11 10 0
Battens: best 2½ by 6 and 3 by 6 ..	0 10 0	less than 7 in. and 8 in.
Deals: seconds	1 0 0	less than best
Battens: seconds	0 10 0	,, ,, ,,
2 in. by 4 in. and 2 in. by 6 in. ..	8 10 0	9 10 0
2½ by 4½ in. and 2 in by 5 in. ..	8 0 0	9 0 0
Foreign Sawn Boards—		
1 in. by 12 in. by 11 in.	0 10 0	more than battens.
¾ in.	1 0 0	,,
Fir timber: Best middling Danzig or Memel (average specification)	At per load of 50 ft.	
Seconds	4 10 0	5 0 0
Small timber (8 in. to 10 in.)	4 5 0	4 10 0
Swedish balks.....	3 12 6	3 15 0
Itch-pine timber (30 ft.).....	2 15 0	3 0 0
JOINERS' WOOD.	3 0 0	3 10 0
White Sea: First yellow deals, 3 in. by 11 in.	At per standard.	
3 in. by 9 in.	22 0 0	23 0 0
Battens, 2½ in. and 3 in. by 7 in.	20 0 0	21 0 0
Second yellow deals, 3 in. by 11 in.	16 10 0	18 0 0
,, ,, 3 in. by 9 in.	18 0 0	20 0 0
Battens, 2½ in. and 3 in. by 7 in.	16 10 0	18 10 0
Third yellow deals, 3 in. by 11 in. and 9 in.	13 0 0	14 0 0
Battens, 2½ in. and 3 in. by 7 in.	14 0 0	15 10 0
Petersburg: first yellow deals, 3 in. by 11 in.	11 10 0	12 10 0
Do. 3 in. by 9 in.	20 0 0	21 0 0
Battens.....	17 0 0	18 0 0
Second yellow deals, 3 in. by 11 in.....	13 0 0	14 0 0
Do. 3 in. by 9 in.	15 0 0	16 10 0
Battens.....	13 10 0	14 10 0
Third yellow deals, 3 in. by 11 in.....	11 0 0	12 0 0
Do. 3 in. by 9 in.	12 10 0	13 10 0
Battens.....	12 0 0	13 0 0
White Sea and Petersburg:—	10 0 0	11 0 0
First white deals, 3 in. by 11 in.	14 0 0	15 0 0
,, ,, ,, 3 in. by 9 in.	13 0 0	14 0 0
Battens.....	11 0 0	12 0 0
Second white deals 3 in. by 11 in.	13 0 0	14 0 0
,, ,, ,, 3 in. by 9 in.	12 0 0	13 0 0
,, ,, ,, battens.....	9 10 0	10 10 0
Pitch-pine: deals	16 0 0	18 0 0
Under 2 in. thick extra	0 10 1	0 0 0
Yellow Pine—First, regular sizes..	32 0 0	33 10 0
Broads (12 in. and up).....	2 0 0	more.
Oddments	22 0 0	24 0 0
Seconds, regular sizes	24 10 0	26 10 0
Yellow Pine Oddments	20 0 0	22 0 0
Kauri Pine—Planks, per ft. cube..	0 3 6	0 4 6
Danzig and Stettin Oak Logs— Large, per ft. cube	0 6	0 3 0
Small ,, ,, ...	0 2 3	0 2 6
Wainscot Oak Logs, per ft. cube ..	0 5 0	0 5 6
Dry Wainscot Oak, per ft. sup. as inch	0 0 7½	0 0 8
¾ in. do. do.	0 0 7	- - -
Dry Mahogany—		
Honduras, Tabasco, per ft. sup. as inch	0 0 9	0 0 11
Selected, Figury, per ft. sup. as inch	0 1 6	0 2 0
Dry Walnut, American, per ft. sup. as inch	0 0 10	0 1 0
Teak, per load	16 0 0	20 0 0
American Whitewood Planks—		
Per ft. cube.....	0 3 0	0 3 6
Prepared Flooring—	Per square.	
1 in. by 7 in. yellow, planed and shot	0 13 0	0 16 6
1 in. by 7 in. yellow, planed and matched	0 13 6	0 17 6
1¼ in. by 7 in. yellow, planed and matched	0 15 0	1 0 0
1 in. by 7 in. white, planed and shot	0 11 0	0 12 6
1 in. by 7 in. white, planed and matched	0 11 6	0 13 6
1¼ in. by 7 in. white, planed and matched	0 13 6	0 15 6

6 in. at 6*d.* per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £ s. d.	£ s. d.
Rolled Steel Joists, ordinary sections	6 5 0	7 5 0
Compound Girders ,, ,,	8 2 6	9 5 0
Angles, Tees and Channels, ordinary sections	7 17 6	8 17 6
Flitch Plates	8 5 0	8 15 0
Cast Iron Columns and Stanchions, including ordinary patterns	7 2 6	8 5 0

PRICES CURRENT (*Continued*).

METALS.

	Per ton, in London. £ s. d.	£ s. d.
IRON—		
Common Bars.....	7 15 0	8 5 0
Staffordshire Crown Bars, good merchant quality	8 5 0	8 15 0
Staffordshire "Marked Bars" ..	10 10 0	- - -
Mild Steel Bars.....	9 0 0	9 10 0
Hoop Iron, basis price.....	9 5 0	9 10 0
,, ,, galvanised.....	10 0 0	- - -
(* And upwards, according to size and gauge.		
Sheet Iron, Black,—		
Ordinary sizes to 20 g.....	10 0 0	- - -
,, ,, to 24 g.....	12 0 0	- - -
,, ,, to 26 g.....	12 10 0	- - -
Sheet Iron, Galvanised, flat, ordinary quality.—		
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.....	12 15 0	- - -
,, ,, 22 g. and 24 g.	13 5 0	- - -
,, ,, 26 g.....	14 5 0	- - -
Sheet Iron, Galvanised, flat, best quality :—		
Ordinary sizes to 20 g.....	16 0 0	- - -
,, ,, 22 g. and 24 g.	16 10 0	- - -
,, ,, 26 g.....	18 0 0	- - -
Galvanised Corrugated Sheets.—		
Ordinary sizes, 6 ft. to 8 ft. 20 g.	12 15 0	- - -
,, ,, 22 g. and 24 g.	13 5 0	- - -
,, ,, 26 g.	14 5 0	- - -
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. by 20 g. and thicker ..	12 0 0	- - -
,, ,, 22 g. and 24 g.	13 0 0	- - -
,, ,, 26 g.	14 5 0	- - -
Cut nails, 3 in. to 6 in.	9 5 0	9 15 0
(Under 3 in. usual trade extras.)		

LEAD, &c.

	Per ton in London. £ s. d.	£ s. d.
LEAD—Sheet, English, 3 lbs. & up.	13 17 6	- - -
Pipe in coils	14 7 6	- - -
Soil Pipe.....	16 17 6	- - -
ZINC—Sheet—		
Vieille Montagne..... ton	24 0 0	- - -
Silesian	23 15 0	- - -
COPPER—		
Strong Sheet..... per lb	0 0 10	- - -
Thin ..... ,,	0 0 11	- - -
Copper nails..... ,,	0 0 11	- - -
BRASS—		
Strong Sheet..... ,,	0 0 10	- - -
Thin ,,	0 0 10½	- - -
TIN—English Ingots..... ,,	0 1 5	- - -
SOLDER—Plumbers' ..... ,,	0 0 7	- - -
Tinmen's ..... ,,	0 0 9	- - -
Blowpipe ..... ,,	0 0 10	- - -

ENGLISH SHEET GLASS IN CRATES.

15 oz. thirds'.....	2½*d.* per ft. delivered.
,, fourths	2¾*d.* ,, ,,
21 oz. thirds	3¼*d.* ,, ,,
,, fourths.....	3*d.* ,, ,,
26 oz. thirds	4¼*d.* ,, ,,
,, fourths	3¾*d.* ,, ,,
32 oz. thirds	5¼*d.* ,, ,,
,, fourths	4¾*d.* ,, ,,
Fluted sheet, 15 oz.....	3*d.* ,, ,,
,, ,, 21 ,, ...	4*d.* ,, ,,
¼ Hartley's Rolled Plate	1¾*d.* ,, ,,
⅜ ,, ,, ,, ...	2¾*d.* ,, ,,
½ ,, ,, ,, ...	2¾*d.* ,, ,,

OILS, &c.

	£ s. d.
Raw Linseed Oil in pipes or barrels .. per gallon	0 2 9
,, ,, ,, in drums ..... ,,	0 3 0
Boiled ,, ,, in pipes or barrels .. ,,	0 2 11
,, ,, ,, in drums ..... ,,	0 3 7
Turpentine, in barrels ..... ,,	0 2 10
,, in drums ..... ,,	0 3 0
Genuine Ground English White Lead per ton	21 0 0
Red Lead, Dry ..... ,,	20 0 0
Best Linseed Oil Putty ..... per cwt.	0 2 5
Stockholm Tar ..... per barrel	1 12 0

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Elastic Copal Varnish for outside work ..	0 16 0
Best Elastic Copal Varnish for outside work ..	1 0 0
Best Elastic Carriage Varnish for outside work	0 16 0
Best Hard Oak Varnish for inside work.....	0 10 0
Best Extra Hard Church Oak Varnish for inside work	0 10 6
Fine Hard Copal Varnish for inside work.....	0 16 0
Best Hard Copal Varnish for inside work.....	1 0 0
Best Hard Carriage Varnish for inside work....	0 16 0
Extra Pale Paper Varnish	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 5 6
Berlin Black	0 16 0
Knotting	0 10 0
Best French and Brush Polish	0 10 0

TO CORRESPONDENTS.

C. & W. (Amounts should have been stated.)

NOTE.—The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications.

Letters or communications (beyond mere news items) which have been duplicated for other journals are NOT DESIRED.

We are compelled to decline pointing out books and giving addresses.

Any commission to a contributor to write an article is given subject to the approval of the article, when written, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

All communications regarding literary and artistic matters should be addressed to THE EDITOR: those relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and *not* to the Editor.

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than 10 a.m. on Thursdays.* N.B.—We cannot publish Tenders unless authenticated either by the architect or the building-owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is given, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

* Denotes *accepted.* † Denotes *provisionally accepted.*

ABERGELE (N. Wales).—For the erection of stables, coachhouse, &c., Tan-y-Bryn, for Colonel J. E. Mellor. Messrs. J. Eaton, Sons, & Cantrell, architects, Stamford-street, Ashton-under-Lyne :—
Albert Emmett, Dukinfield, Cheshire* £2,320

ASHBY-DE-LA-ZOUCH. — For the erection of five shops and temperance hotel, for Mr. W. Trussell, Burton-on-Trent. Mr. F. S. Antliff, architect, Draycott, Derby. Quantities by architect :—

Vickers & Son	£3,907 o	H. Vernon	£3,739 o
W. Moss	3,853 o	Lowe & Son, Burton-on-Trent†	3,604 o
E. Orton	3,823 o		
A. Faulks	3,745 10		

AXBRIDGE (Somerset).—For additions to National Schools, for the Managers. Mr. C. Brown, architect, Wells, Somerset :—
C. Addicott £320

BODMIN.—For alterations, &c., to business premises, for Messrs. Marshall & Son. Mr. W. J. Jenkins, architect, Bodmin :—

Buscombe Bros.	£1,132	Ham Bros., Bodmin*	£974
Brown & Son	1,049		

BUTLER'S CROSS.—For the erection of the Ellesborough Parish Hall. Messrs. Barrett & Driver, architects, 53, Blomfield-road, Maida-vale :—

Webster & Cannon	£1,060 o o	G. Parsons	£795 o o
G. Darlington	918 o o	W. Morton	685 o o
H. J. Wright	859 16 o	Senior & Clarke, Wendover*	660 16 6

CARDIFF.—For additions and alterations to offices, Charles-street, Cardiff. Messrs. Veall & Sant, architects :—

Lattey & Co., Ltd.	£1,007 17 o	Allan & Son	£912 o o
Thomas & Co.	997 o o	F. Small	898 o o
D. W. Davies	971 o o	Knox & Wells	883 o o
Beames & Nephew	945 o o	Shepton & Son	875 o o
G. Griffiths	945 o o	I. Thomas	865 o o
		Melhuish Bros.	850 o o
		Symonds & Co.*	845 2 6

CARDIFF.—For the erection of a church, Barry Island. Messrs. Habershon, Fawckner, & Groves, architects, 14, Pearl-street, Cardiff :—

	Hall.	Front Wall.	Back Boundary.
G. Hallet	£1,305 o o	£45 10 o	£83 5 o
D. W. Davies	1,160 o o	32 19 6	80 o o
J. W. Davies	1,090 o o	40 o o	55 o o
Geo. Haywood	1,076 o o	35 o o	86 o o
T. J. Martyn	1,064 16 2	41 2 6	79 4 11
C. Rendell	1,050 o o	33 8 o	72 14 o
J. Jenkins	1,010 16 o	22 3 o	86 5 o
D. Hopkins	928 16 o	30 8 6	69 2 3
Gibby & Cleake, Barry*	795 o o	34 10 o	65 10 o

CARDIFF.—For the erection of additions at Roath abattoirs, Cycle-street, for the Corporation. Mr. W. Harpur, C.E., Town Hall, Cardiff :—

Williams & Hoare	£395 5 9	G. Griffiths	£382 17 o
D. W. Davies	392 o o	Knox & Wells	377 o o
		F. Small*	370 o o

[All of Cardiff.]

HALLIFORD.—For the erection of a small bungalow on the river side, Halliford, for Mr. James Parker Ayres. Mr. H. Fuller-Clark, architect, 30, John-street, Bedford-row :—
Simpson & Co., Walton-on-Thames* £245

HENGOED (Cardiff, Wales).—For the erection of twenty houses, for the Building Club. Mr. P. Vivian Jones, architect, Hengoed, via Cardiff :—

F. F. Howells	£3,990	J. H. James, 13, Kincraig-street, Cardiff*	£3,800
Davies & Co.	3,920		
D. Williams	3,900		

HINCKLEY (Leicestershire).—For Board Schools. Messrs. R. J. & J. Goodacre, architects, Leicester :—
Hall & Son, Hinckley £6,165

LITTLEPORT (Cambs.)—For the erection of a cemetery chapel for the Parish Council. Mr. H. G. Martin, surveyor, Littleport, Ely :—

Scales & Robins	£395 o	T. H. Summerlee	£286 10
R. Rust	357 10	Drake & Lofts, Littleport*	260 o
J. W. Collens	320 o		
Thomas Purdy	298 o		

LLANDRINDOD WELLS.—For the erection of a vicarage house, Llanbedr, Radnorshire, for Rev. J. T. Beynon. Mr. R. Wellings Thomas, architect, Llandrindod Wells. Quantities by the architect :—

R. E. Davies	£1,429 o	D. Meredith	£1,040 10
J. C. Evans	1,379 18	E. M. Davies, Talgarth*	987 o

LONDON.—For two houses on the site of the old Vale of Health Tavern, Vale of Health, Hampstead Heath. Messrs. Lowe & Goldschmidt, Heath-street, Hampstead, and A. W. Hudson, 87, Finsbury-pavement, London, E.C., architects :—

J. & W. T. Inkpen	£2,199 o	Dabbs & Son	£1,480 o
W. J. King	1,936 10	A. Collins	1,175 o
Sheffield Bros.	1,797 o		

LONDON.—For rebuilding shop and premises, No. 110, Broughton-road, S.W., for Mr. A. R. Bocock. Messrs. Blangy & Van Baars, architects, 12, Southampton-buildings, W.C. :—

Leslie & Co.	£2,860	Adamson & Sons	£2,290
Langdale & Hallett	2,700	F. W. Green	2,283
Stimpson & Co.	2,486	Syme & Duncan*	2,250
Lole & Lightfoot	2,418	Turtle & Appleton	2,220

LONDON.—For the erection of a house, stables, and laying-out garden in Frognal-lane, Hampstead, for Mr. T. Blake Frost. Messrs. Barrett & Driver, architects, 53, Blomfield-road, Maida-vale. Quantities by Mr. Max Clarke, 4, Queen's-square :—

	House.	Stables.	Garden.	
Garrett & Sons	£6,196 o	£1,384 o	£1,331 o	£8,911 o
Miskin & Sons	7,810 o	1,328 o	1,069 o	8,207 o
Gough & Co.	5,825 o	1,316 o	983 o	8,124 o
Lawrence & Sons	5,721 o	1,300 o	1,075 o	8,096 o
Simpson & Son	5,604 o	1,300 o	1,131 o	8,035 o
G. & I. Waterman	5,644 o	1,290 o	1,045 o	7,979 o
Holloway Bros.	5,560 o	1,280 o	1,120 o	7,960 o
Geo. Neal	5,589 o	1,212 o	1,040 o	7,841 o
Whitehead & Co., Ltd.	5,450 o	1,250 o	1,100 o	7,800 o
W. Tout	5,293 15	1,202 12	1,058 4	7,552 11
Wallis & Sons, Maidstone*	5,180 o	1,120 o	948 o	7,248 o

LONDON.—For the manufacture, delivery, and erection of four 32 in. and four 23-in. centrifugal pumps, hydraulic accumulator, and all accessories complete, at the new pumping-station in Lots-road, Chelsea, for the London County Council :—

Tangyes, Ltd.	£7,380	John Cochrane	£6,650
Drysdale & Co.	7,170	Gwynne & Co.	6,580
J. & H. Gwynne, Ltd.	6,887	Easton & Co., Ltd.*	6,545

LONDON.—For heating works at No. 19, Charing Cross-road, for the London County Council :—

Kinnell & Co.	£230 o	Wontner Smith & Co.*	£107 15
G. & E. Bradley	170 10		
Comyn, Ching, & Co.	137 10		

LONDON.—Scavenging, &c., at Blackwall Tunnel, for the London County Council :—
J. Toms & Son* £240

LONDON.—For the reconstruction of Beckenham-lane Bridge over the river Ravensbourne, near the junction of Beckenham-lane and Bromley-road, for the London County Council :—

Fasey & Son	£1,250 4 3	Kavanagh & Co.*	£1,034 1 6

LONDON.—For the reconstruction, for electrical traction, of the tramways between (*a*) Camberwell Green and near Vauxhall Bridge : (*b*) St. George's-circus and the junction of Kennington-road with Westminster Bridge-road ; and (*c*) Kennington Park-road and Brixton-road —capital expenditure, 73,800*l.*—for the London County Council :—
White & Co., at prices based upon those in their existing contract for the reconstruction of the Westminster to Tooting, &c., lines.

LONDON.—For two new steel cables for the Streatham cable tramways, for the London County Council :—

30,000 Feet Cable.

D. H. & G. Haggie	£924 o 4
Dennis & Co.	878 8 o
Latch & Batchelor, Ltd.	870 o o
Brown & Co. (Bankhall), Ltd.	800 o o
Bullivant & Co., Ltd.	780 o o
Wilkins & Co.	683 7 9
Newall & Son, Ltd.*	668 o o

9,500 Feet Cable.

J. & E. Wright, Ltd.	346 o o
D. H. & G. Haggie	290 5 8
Allan, Whyte, & Co.	282 2 o
Dennis & Co.	276 o o
Hartlepool Ropery Co., Ltd.	263 o o
W. D. Houghton	236 5 o
Bullivant & Co., Ltd.	235 o o
Latch & Batchelor, Ltd.	227 10 o
W. G. Glover	227 o o
Brown & Co. (Bankhall), Ltd.	220 o o
Wilkins & Co.	209 15 6
Newall & Son, Ltd.*	£209 o o

HENDON.—For fully making up Milton-road, Hendon, under Section 150 P. H. Act, 1875, and kerbing, channelling and tar-paving works in Finchley-lane, Colm Deep-lane, and Hermitage-lane, for the Urban District Council of Hendon. Mr. S. Slater Grimley, Engineer and Surveyor :—

	Milton-road.	Finchley-lane.	Hermitage-lane.	Colm Deep-lane.	Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
T. Adams	1,134 3 4	412 19 2	127 5 6	933 1 10	1,907 9 10
Meston & Hale	1,007 4 6	410 17 6	137 8 o	270 4 11	1,351 14 11
Ballard, Ltd., Child's Hill*	997 o 10	408 o o	118 4 4	234 6 3	1,747 11 5
Surveyor's estimate	1,110 14 6	399 6 9	140 7 9	211 12 1	1,902 1 1

LONDON.—For the reconstruction, for electrical traction, of the Tramways between Westminster and Tooting, &c. (laying of stoneware ducts for electric cables), for the London County Council :—

Mowlem & Co.	£7,457 o o	Clift Ford	£6,899 o o
Kavanagh & Co.	7,248 7 6	Reid Bros.	6,693 7 4
White & Co.	6,999 12 6	J. A. Ewart, Paddington*	6,273 5 o

LONDON.—For alterations of and additions to the car-sheds at the Balham depot (reconstruction of Tooting tramways for electrical traction), for the London County Council :—

Martin, Wells, & Co., Ltd.	£2,763 o o
J. McManus	2,400 14 6
Roberts & Co., Redhill*	1,900 o o

LONDON.—For the erection of dwellings on the Preston's-road and Norfolk-street sites, Poplar, for 1,304 persons, for the London County Council :—

	£	For all six blocks a reduction of
Barker & Co.	17,470	nil.
Holloway Bros.	17,394	1 per cent.
Spencer, Santo, & Co.	17,250	Not stated.
Holliday & Greenwood (informal)	16,892	—
F. & H. F. Higgs	16,400	nil.
B. E. Nightingale	15,807	nil.
Stimpson & Co.	15,078	nil.
F. & T. Thorne*	14,959	3½ per cent.

MAIDENHEAD.—For the erection of a riverside villa on the Fishery Estate, for Mr. F. H. Grove. Messrs. Palgrave & Co., architects, Westminster :—
Belcher & Co., Ltd., St. Andrew's-hill, Queen Victoria-street, E.C.* £1,600

OLD TRAFFORD.—For the erection of public baths, Old Trafford, for the Stretford Urban District Council. Mr. Ernest Woodhouse, architect, 88, Mosley-street, Manchester :—

Robt. Holland	£9,465 15 o	S. Warburton	£8,076 2 10
P. Hodkinson	9,000 o o	J. Bland	8,032 o o
Johnson & Co.	8,860 o o	Southern & Sons	8,015 o o
J. Ramsbottom	8,796 o o	Wm. Healey	8,000 o o
Brown & Son	8,789 o o	H. Matthews	7,905 o o
G. A. Pillatt	8,760 o o	R. Carlyle	7,744 o o
Young, Sinker, & Young	8,539 o o	Bullivant & Sons	7,695 o o
T. & W. Meadows	8,305 o o	Burgess & Galt	7,570 o o
Wm. Shaw	8,255 o o	Wm. Thorpe, Old Trafford, Manchester*	7,448 o o
J. & D. Blunn, Ltd.	8,208 10 o		
Peters & Sons	8,083 o o		

ROCHFORD (Essex).—For the erection of a laundry at the workhouse, for the Guardians. Messrs. Greenhalgh & Brockbank, architects, Southend. Quantities by Mr. G. T. G. Wright, 3, Great Winchester-street, London :—

E. West	£2,333	J. Band	£2,190
S. E. Moss	2,316	W. E. Dowey	2,170
Davis & Leaney	2,229	F. & E. Davey, Southend*	2,085
H. Potter	2,213		

THORNTON (Leicestershire).—For Board schools. Messrs. R. J. & J. Goodacre, architects, Leicester :—
Faulks, Loughborough £1,680

WEST HAM.—For the erection of farm buildings at asylum, Chadwell Heath, for the Town Council. Mr. J. G. Morley, Borough Engineer, Town Hall, West Ham :—

Dupont & Co.	£6,879	Works Manager	£6,281
Gregar & Son	6,426	S. Parmenter, Braintree*	5,933
H. J. Carter	6,350		
C. North	6,287		

LONDON SCHOOL BOARD TENDERS.

At the last meeting of the London School Board, the Works Committee submitted the following lists of tenders. Mr. T. J. Bailey is the Board's Architect :—

* *Recommended for acceptance.*

CLEANING BOILERS AND PROVIDING NEW HEATERS.—Head Offices of the Board :—

Duffield & Sons	£930	The Brightside Foundry and Engineering Co., Ltd.*	£279
Cannon & Sons	285		
J. Esson	285		
J. & F. May	283		

CONVERTING COOKERY CENTRE INTO A HOUSEWIFERY CENTRE.—Lower Chapman-street School, St. George's-in-the-East :—

Gibb & Co.	£359 o	F. & F. J. Wood	£316 o
A. E. Symes	325 o	G. Barker*	249 10
Vigor & Co.	325 o		

DRAINAGE AND SANITARY WORKS.—Basnett road School, Lavender Hill :—

J. & M. Patrick	£3,907 o o	J. Carmichael	£2,369 10 o
Maxwell Bros., Ltd.	2,868 o o	R. P. Beattie	2,355 11 5
Martin, Wells, & Co., Ltd.	2,700 o o	Whitehead & Co., Ltd.	2,325 o o
G. Neal	2,528 o o	E. Triggs	2,316 10 o
Lathey Bros.	2,493 o o	J. & C. Bowyer	2,279 o o
Falkner & Sons	2,437 o o	J. Peattie*	2,210 o o
Stimpson & Co.	2,380 o o		

[See also page 91.

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

(For some Contracts, &c., still open, but not included in this List, see previous issues.)

CONTRACTS.

Nature of Work or Materials.	By whom Advertised.	Forms of Tender, &c., Supplied by	Tenders to be delivered
House at Sewage Disposal Works	Armagh U.D.C.	T. G. Peel, Toutine, Armagh	July 28
Six Houses and Shops, Caerphilly	Workington Indus. Co-op. Soc., Ld.	J. H. Phillips, Architect, Windsor-place, Cardiff	July 29
Four Cottages, Harrington-road	Horsham (Sussex) U.D.C.	W. G. Scott & Co., Architects, Workington	do.
Cast Iron Mains	The Committee	S. Mitchell, Council's Offices, Horsham	do.
Drill Hall, &c., Chelmsford	Foleshill R.D.C.	Taylor & Wenley, 17, Duke-street, Chelmsford	do.
Main Laying	Rev. M. P. Davison	A. E. Newey, Engineer, Union Buildings, Foleshill	do.
Church, Harehills-avenue, Leeds	Brynmawr U.D.C.	W. H. Dinsley, Architect, Chorley, Lancs	do.
Sewers, &c., Llanelly	Swindon Guardians	W. Slocombe, Surveyor, Brynmawr, Wales	do.
Electricity Works, Infirmary, Stratton St. Margaret	Barnet U.D.C.	G. R. Peers, Civil Engineer, John Dalton-street, Manchester	do.
*600 tons Granite and Gravel, &c.	Bolton Town Council	Council Offices, 40, High-street, Barnet	do.
Paving, &c., Jethro-street and others	Limerick Guardians	W. Marsden, Surveyor, Town Hall, Bolton	July 30
Works at Schools	Manchester Corporation	O'Malley, Borough Engineer, 10, Glentworth-street, Limerick	do.
Shed, &c., at Police Station, Albert-street	do.	City Architect, Town Hall, Manchester	do.
Alterations to Offices, Phillips Park Cemetery	do.	do.	do.
Additions to Schools	Tadley School Board	J. Gibson, Architect, Basingstoke	do.
Additions to Schools, Union-street, St. Thomas	Exeter School Board	J. Jerman, Architect, 5, Bedford-circus, Exeter	do.
Paving Church Walk	Trowbridge U.D.C.	H. G. N. Lailey, Civil Engineer, Surveyor, Town Hall, Trowbridge	do.
Chapel, &c.	Rothwell U.D.C.	Gotch & Saunders, Architects, Kettering	do.
Conveniences, Hillsborough Park	Sheffield Corporation	C. F. Wike, Civil Engineer, Town Hall, Sheffield	do.
Laundry, Barnard-terrace, Bradford	Heywood Water Board	W. Rycroft, Architect, Manchester-road, Bradford	do.
Reservoir, Norden, near Rochdale	Newhaven Guardians	J. Diggle, Civil Engineer, Heywood	do.
Works at Workhouse	Neston & Parkgate U.D.C.	H. C. Card, Architect, 10, North-street, Lewes	do.
Sewers, Chester	N. E. R. Co.	Knowles & Russell, Engineers, 5, Castle-street, Liverpool	do.
Station Buildings, Crossgates, Yorks	Llantrisant School Board	W. Bell, Architect, York	do.
Additions to Schools, Gilfach Goch	Naas (Ireland) Guardians	J. Rees, Architect, Pentre, Rhondda	do.
Sanitary Works at Infirmary	Kilsyth (N.B.) Town Council	D. J. Purcell, Workhouse, Naas, Ireland	do.
Paving Works, Main Street	Bradford Corporation	J. T. Babtie, Engineer, 180, Hope-street	do.
Schools, &c., Cefofaes, Bethesda, Wales	Truro Corporation	R. Davies, Architect, Bangor	July 31
Public Baths, Morley-street	The Governors	F. Stevens, Town Hall, Bradford	do.
Alterations to Hospital	Baildon R.D.C.	Measham Lea, City Surveyor, Truro	do.
Additions to the Mackie Academy, Stonehaven	Peterborough Corporation	Kelly & Nicol, Architects, 367, Union-street, Aberdeen	do.
Two Houses, Park-road, West Crossland Moor	Hambledon (Surrey) R.D.C.	A. Shaw, Architect, Golcar	do.
Road Maintenance	Whickham U.D.C.	J. Bentley, Council Offices, Baildon, Yorks	do.
Additions to Boiler House, &c., Albert-place	Ealing Town Council	J. C. Gill, Civil Engineer, Municipal Offices, Peterborough	do.
Reservoirs, Chilworth	do.	F. S. Courtney, Civil Engineer, Broad Sanctuary Chambers, S.W.	do.
Schools, Bargoed, Wales	Leeds City Council	Rev. D. L. Evans, 21, Bristol-terrace, Bargoed	do.
Sewerage Works, Marley Hill	Parish Council	J. B. Renton, Surveyor, Whickham	do.
Chapel, Blaenrhondda, Wales	Truro Town Council	J. Rees, Architect, Pentre	do.
*Widening of Northfield-lane	Pontypridd U.D.C.	Borough Engineer, Town Hall, Ealing, W.	do.
*Erection of Lodge, Lammas Park	Baildon (Yorks) U.D.C.	do.	do.
Four Underground Water Tanks	Hambledon R.D.C.	City Engineer, Leeds	do.
Electricity Works, Hapton, Lancs	Abingdon Corporation	E. O. Shaughnessy, 16, Hammond-terrace, Padiham	do.
Electricity Works	Vicar and Churchwardens	R. Dobell, Town Hall, Truro	do.
Cables, &c.	Messrs. R. Stephenson & Co	R. P. Wilson, Engineer, 66, Victoria-street, S.W.	do.
Limestone (500 tons)	Rotherham Corporation	J. Bentley, Council Offices, Baildon	do.
Reservoir, Chilworth, near Guildford	Brentwood U.D.C.	F. S. Courtney, Civil Engineer, Broad Sanctuary Chambers, S.W.	do.
Sewers, &c.	Boston Burial Board	G. Winship, Civil Engineer, Abingdon	do.
Additions to Church, Trecastle, Breconshire	Altofts U.D.C.	D. T. Isaac, Ruperra House, Brecon	do.
Seventy Houses, Darlington	L. & Y. Railway Co.	W. Y. Dixon, Baltic Chambers, West Hartlepool	do.
Additions to Generating Station, Rawmarsh-road	Brentwood U.D.C.	J. Platts, Architect, High-street, Rotherham	Aug. 1
Fire Station, Hart-street	Ramsbottom R.D.C.	J. E. Fothergill, Surveyor, Town Hall, Brentwood	do.
Wrought Iron Fence, St. John's-lane	Walmer U.D.C.	W. H. Wheeler, Civil Engineer, Market-place, Boston	do.
Causeways, &c.	Mr. A. Green	J. C. Coates, Surveyor, Council Offices, Altofts	do.
Railway Works, Crofton to Shafton	Sligo Guardians	R. C. Irwin, Hunt's Bank, Manchester	do.
*Fire Station, Brentwood	Windsor Town Council	Council's Surveyor, Town Hall, Brentwood	do.
Forming, &c., Shilton-street	Roscommon Guardians	T. H. Bell, Surveyor, Council Offices, Ramsbottom	Aug. 2
Road Metal (400 tons)	Littlehampton R.D.C.	H. W. Barker, Surveyor, Walmer	do.
Six Houses, Strensall	Dorchester R.D.C.	T. Stokes, Architect, Thirsk	do.
Roofing Works	Bishop Auckland R.D.C.	Clerk, Board Room, Workhouse, Sligo	do.
Walling, &c., at Cemetery	Bishops Stortford Hospital Com.	E. C. Durant, 32, Park-street, Windsor	do.
House, &c.	Seaford U.D.C.	T. J. O'Keefe, Workhouse, Roscommon	do.
Road Metal (800 tons)	Larne U.D.C.	A. Shelley, Town Offices, Littlehampton	do.
Water Supply Works, Malden Newton	Chester County Council	F. W. Mager, Civil Engineer, Aldridge, near Walsall	do.
Road Works, Coundon Grange	Mr. Blakely Kennedy	W. Johnston, Surveyor, Crofton House, Bishop Auckland	Aug. 4
Additions to Hospital	St. Stephens by Saltash Sch. Brd.	E. T. Watts, Surveyor, Thorley, Bishops Stortford	do.
Boundary Wall at Cemetery	Bucks County Council	B. A. Miller, Surveyor, 3, Clinton-place, Seaford	do.
Conveniences	City of Bradford Co.-op. Soc., Ltd.	W. G. Yonge, Town Hall, Larne, Ireland	do.
Asylum Works, Upton	Herne Bay U.D.C.	H. Beswick, County Surveyor, Chester	Aug. 5
Villa, Castlereagh, Co. Down, Ireland	Hertford Union	J. V. Breman, Architect, Belfast Bank Chambers, Castlereagh	do.
Schools	Bethesda (Wales) U.D.C.	W. J. Carter, 8, Architect, Athenæum-terrace, Plymouth	do.
*Three Cottages and Tool Store, Slough	Clown R.D.C.	County Surveyor, County Hall, Aylesbury	Aug. 6
Store Premises, Great Horton-road, Bradford	Poplar Borough Council	W. Rycroft, Architect, Bradford	do.
*Preparing Pavilion Site	City of London Union	Council's Surveyor, Town Hall, Herne Bay	do.
*Alterations, &c., to Porter's Lodge, Union Workhouse	Commissioners of H.M. Works	Russell Austin, 13, Villiers-street, Hertford	Aug. 9
Waterworks Alterations	Isolation Hospital Joint Comm.	E. Evans, Civil Engineer, Council Offices, Bethesda	do.
Sewers, Creswell, near Chesterfield	Coventry Corporation	E. H. Barber, Civil Engineer, Clown, near Chesterfield	do.
*Painting, &c., at Public Buildings	Barnes School Board	Borough Surveyor, High-street, Poplar, E.	do.
*Main Drainage Works, &c., Homerton Workhouse	Pontypridd U.D.C.	Clerk to Guardians, 61, Bartholomew Close, E.C.	Aug. 11
*Inland Revenue Office, Ipswich	Cardiff Corporation	H.M. Office of Works, Storey's Gate, S.W.	Aug. 12
*Additions to Hospital, Bishops Stortford	Ilkeston Corporation	E. T. Watts, Surveyor, Thorley, Bishops Stortford	do.
*Street Paving Works, &c.	Heanor U.D.C.	City Engineer, St. Mary's Hall, Coventry	do.
*New Infants' School	Malvern U.D.C.	C. Innes, Architect, 50, Cannon-street, E.C.	Aug. 14
*Foundations, &c., of New Asylum, near Cardiff	Newport Corporation	R. P. Wilson, Engineer, 66, Victoria-street, S.W.	Aug. 14
*Electric Power Station and Car Sheds	Thames Conservancy	Oatley & Skinner, Architects, Baldwin-street, Bristol	Aug. 18
Water Supply Works	.....	G. & F. W. Hodson, Civil Engineer, Loughborough	Aug. 21
Water Supply Works, Heanor	.....	do.	do.
Electricity Supply Works	.....	H. P. Maybury, Engineer, Council House, Malvern	Aug. 23
*Erection of Lunatic Asylum, Caerleon	.....	Borough Engineer, Newport (Mon.)	Aug. 27
*Dredging Works	.....	Conservators' Office, Victoria Embankment	No date
Pipe Laying, &c., Aylesford, Kent	.....	W. Coker, Aylesford, Kent	do.
Additions to Schools, Slateford-road, Edinburgh	.....	Buchanan & Bennett, Civil Engineer, 12, Hill-street, Edinburgh	do.
House and Shop, Thorpe Hesley, Yorks	.....	H. Smith, Architect, Wentworth, near Rotherham	do.
Two Cottages, &c., Thorpe Hesley, Yorks	.....	do.	do.
Three Houses, Arctic-street, Keighley	.....	J. Haggas & Son, Architects, North-street, Keighley	do.
River Wall, Lawford, near Colchester	.....	C. M. Stanford, Colchester	do.
Electric Lighting Wks., Wesleyan Missn. Hall, Leeds	.....	E. Featherstone, Kirkgate Market, Leeds	do.
Forty-one Houses, Abertillery	.....	J. Evans, 8, Queen-street, Cardiff	do.
Causeway, &c., Coronation-road, Newark	.....	Sheppard Harrison, Architects, Bargate, Newark	do.
Club Premises, Lowestoft	.....	Secretary, Royal Norfolk & Suffolk Yacht Club, Lowestoft	do.
Shop, &c., Beaufort-street, Brynmawr, Wales	.....	B. J. Francis, Architect, Abergavenny	do.
Bricks (250,000) Bargoed	.....	The Secretary, Rhymney Iron Co., Ltd., Rhymney, Mon.	do.
Two Houses, Beverley	.....	F. Musto, Architect, Greek-street Chambers, Leeds	do.
Paving Works, Handsworth	.....	W. Roberts, Surveyor, Victoria-square, Birmingham	do.
Road Works, Hill Top, near Chesterfield	Mr. W. Doubleday	W. H. Wagstaff, Civil Engineer, 57, Saltergate, Chesterfield	do.
*New School	Royal Norfolk & Suffolk Yacht Cb.	J. A. Reeve, Architect, 20, Victoria-street, S.W.	do.
*Additions, &c., to Sonning Bridge	Mr. Bush	County Surveyor, Oxford	do.
	Rhymney Iron Company, Ltd.		
	Mr. W. Arnott		
	Far Croft Estate Co., Ltd.		
	Bolsover U.D.C.		
	Trustees Lambeth Boys' School		
	Oxford Council Council		

[See also next page.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Required.	Salary.	Designs to be delivered
*Clerk of Works	Leeds Corporation	3l. per week	July 31
*Correspondence Clerk	Woolwich Boro' Council	85l. per annum	Aug. 6
*Draughtsman and Measurer	East Ham U.D.C.	130l. per annum	Aug. 12
*Junior Assistant	do.	78l. per annum	do.
*Third Draughtsman (Surveyor's Department)	Metropolitan Asylums Board	2l. 5s. per week	Aug. 15

Those marked with an asterisk (*) are advertised in this Number. *Contracts*, pp. lv. vi. viii. x. & xxii. *Public Appointments*, xviii. & xix.

TENDERS (*Continued*):—

HALLS, &c. (Popham-road (boys' and girls' school), Islington).—Removing boys' and girls' staircases, cloak-rooms, and lavatories; providing new halls for boys and girls, about 73 ft. by 23 ft., with covered playground under for boys; new girls' teachers' room; enlarging and dividing an existing classroom on each floor, and providing additional lighting; enlarging another existing classroom on each floor and providing additional lighting; re-dividing and providing additional lighting to two classrooms on each floor. Revised accommodation—boys 339, girls 304: loss of places, 4 boys and 19 girls; total, 16:—

Gregar & Son	£8,250	Lawrance & Sons	£7,508
Clarke & Bracey	8,232	McCormick & Sons	7,332
Simpson & Son	7,923	General Builders, Ltd.	7,139
W. M. Dabbs	7,832	Treasure & Son	6,816
E. Triggs	7,717	Williams & Son	6,769
C. Cox	7,713	Dearing & Son*	6,633
Grover & Son	7,642		
J. Appleby	7,622		

HEATING APPARATUS (Alexis-street School, Bermondsey):—

Cannon & Sons	£659	Defries & Sons, Ltd.	£530
Oldroyd & Co., Ltd.	640	G. & E. Bradley	505
Stevens & Sons	573	R. Clarke*	501
Knight & Sons	540		

HEATING APPARATUS.—New Graded School in Bostall-lane, Plumstead:—

R. Clarke	£721 10	Defries & Sons, Ltd.	£498 0
Cannon & Sons	717 0	The Brightside Foundry and Engineering Co., Ltd.	479 0
Harlow & Son	693 0	Dargue, Griffiths, & Co., Ltd.*	420 0
J. Esson	685 0		
Wippell Bros. & Row	685 0		
J. and F. May	595 0		
Duffield & Sons	529 0		

HEATING APPARATUS, Mowlem-street, Cambridge Heath:—

W. Simmons	£58 15	Wenham & Waters, Ltd.	£48 10
Cannon & Sons	55 0	J. & F. May	40 15
G. & E. Bradley	53 0	J. Grundy	40 0
J. C. Christie	49 0	Duffield & Sons*	32 0

HEATING APPARATUS.—Park-walk School, Chelsea:—

Dougill & Co., Ltd.	£833 18 10	Duffield & Sons	£520 0 0
G. Davis	775 0 0	Werner, Pfleiderer, & Perkins, Ltd.	555 2 0
J. Esson	680 0 0	The Brightside Foundry and Engineering Co., Ltd.*	475 0 0
J. Grundy	680 0 0		
J. & F. May	585 0 0		
J. C. Christie	575 0 0		
G. & E. Bradley	535 0 0		

HEATING WORKS. — (*a*) Brackenbury-road, (*b*) Monson-road, (*c*) Stanley-street, (*d*) Glengall-road—

(*a*) CHELSEA—Brackenbury-road (Infants' department).—Re-arranging low-pressure hot-water apparatus in class rooms D and E:—

J. Esson	£50 0	Duffield & Sons	£27 0
Stevens & Sons	33 0	Vaughan & Brown, Ltd.	21 16
Cannon & Sons	46 15	R. Clarke	21 0
G. Davis	43 0	Palowkar & Sons*	18 12
W. Simmons	44 0		

(*b*) GREENWICH (Monson-road)—Provisional sum included, £320.—Extending the existing apparatus to four class-rooms in the boys' and girls' departments and three class-rooms in the infants' department, including provision of channels:—

R. Clarke	£412 0	Brightside Foundry and Engineering Co., Ltd.	£279 0
Skinner, Board, & Co.	392 0	Paragon Heating Co.*	254 10
Defries & Sons, Ltd.	343 0		
Duffield & Sons	326 0		

(*c*) GREENWICH (Stanley-street).—Provisional sum included, 225l.—An additional expenditure of 38l. was sanctioned by the Committee on June 30, 1902. Providing and fixing duplicate boiler and low-pressure hot-water apparatus in two class-rooms in the infants' department and three class-rooms in the boys' and girls' departments, and altering the existing apparatus to suit structural alterations:—

Cannon & Sons	£345 10	Wenham & Waters, Ltd.	£248 10
R. Clarke	340 0	Werner, Pfleiderer & Perkins, Ltd.	240 0
J. Esson	317 0	The Brightside Foundry & Engineering Co., Ltd.*	219 0
Price Lea & Co.	310 0		
Skinner & Co.	310 0		
Duffield & Sons	300 0		
Wontner Smith, Gray & Co.	295 0		

(*d*) TOWER HAMLETS (Glengall-road).—Extending the apparatus to two classrooms in the boys' department, also altering the apparatus in classroom E in each of the girls' and infants' departments:—

J. Esson	£175 0	Wontner Smith, Gray, & Co.	£140 0
J. Grundy	175 0	Duffield & Sons	136 0
Stevens & Sons	170 0	J. & F. May	132 0
Cannon & Sons	167 10	Vaughan & Brown, Ltd.*	109 18
Harlow & Son	165 0		

NEW SCHOOL, MACMURDO-ROAD SITE FULHAM PALACE-ROAD.—Finished plans of a school to provide accommodation for 1,142 places (viz., boys 380, girls 380, infants 382) were passed by the Committee on January 27. The school is a three-story building, and contains the following accommodation: Halls—boys', girls', and infants', each 58 ft. by 30 ft. Classrooms—boys' and girls', each 60, 48, 48, 48, 48, 48, 40, 40; infants', 60, 48, 48, 48, 48, 50, 40, 40; drawing classroom and science-room, 1,247 ft. area. Heating by open fires and stoves. Area of site, 77,855 sq. ft. Playgrounds, area per child—boys', 76 sq. ft.; girls' and infants', 32 sq. ft. A schoolkeeper's house is also included in the plans.—

Martin, Wells, & Co.	£29,935	Stimpson & Co.	£26,849
Lorden & Son	28,444	Wallis & Sons	26,628
Leslie & Co., Ltd.	28,304	McCormick & Sons	26,144
C. Cox	27,960	Holliday & Greenwood, Ltd.	26,115
J. Greenwood	27,572	J. & M. Patrick	25,337
King & Son	27,450	Lathey Bros.	25,160
Treasure & Son	27,029	Johnson & Co., Ltd.*	24,950
Lawrance & Sons	26,955		

PARTITIONS, &c., in boys' and girls' departments, Portman-place School, Mile End Old Town—

Altering position of existing partitions and providing an additional glazed partition in order to redivide classrooms C, D, and E into four rooms, and providing skylights (two) to the end rooms, C and E (boys). Also reversing stepped flooring in three of these rooms for left lighting, and altering positions of doorways, forming lobby, &c., in connexion therewith, together with providing new open fire portable stoves for warming three of the rooms and constructing new brick flues in connexion therewith:—

F. & F. J. Wood	£1,580 0	Willmott & Sons	£1,195 0
Bruce, Croom, & Co.	1,560 0	T. H. Jackson	1,049 0
W. Martin	1,485 0	Turnbull & Son*	969 0
London School Furniture Co.	1,450 4	A. J. Sheffield	948 0

PARTITIONS in boys' and girls' departments, St. Andrew's-street School, Wandsworth-road:—

H. Bouneau	£385	Maxwell Bros., Ltd.	£247
W. Hammond	298	E. B. Tucker	239
Lathey Bros.	289	Garrett & Son	235
Marsland & Son	275	Galbraith Bros.	230
W. Martin	250	General Builders, Ltd.*	227
Hooper & Son	247		

PARTITIONS.—Bucking-terrace School, North Kensington:—

London School Furniture Co.	£635	H. Line	£400
Densham & Sons	421	Galbraith Bros.	395
W. R. & A. Hide	415	General Builders, Ltd.	367
		Wake & Dean, Ltd.*	348

PARTITIONS, &c., Ancona-road School, Plumstead:—

H. Line	£299	E. Proctor	£250
Spencer & Co.	295	Bulled & Co.	248
H. Groves	289	H. Bouneau*	232
G. Kemp	255		

PARTITIONS IN MIXED DEPARTMENT.—Beethoven-street School, Queen's Park:—

Lathey Bros.	£965 0 0	S. Polden	£652 12 0
W. R. and A. Hide	947 10 0	McCormick & Sons	634 0 0
M. Pearson	754 0 0	General Builders, Ltd.	629 0 0
The London School Furniture Co.	690 2 6	E. Triggs*	596 0 0

SCHOOL for BOYS, Globe-street Site, Wapping.—A one-story building contains the following accommodation:—Hall, 50 ft. by 24 ft. Class-rooms: 50, 50, 48, 48. Heating by open fires and stoves. Area of site, 7,300 square feet. Playgrounds area per child, 21 square feet:—

Grover & Son	£6,171	Stimpson & Co.	£5,400
McCormick & Sons	5,872	J. & M. Patrick	5,289
Miskin & Sons	5,574	Outhwaite & Son	5,257
Perry & Co.	5,565	Treasure & Son	5,228
Gregar & Son	5,532	C. Cox	5,178
King & Son	5,500	Lawrance & Sons*	5,129

SENIOR MIXED SCHOOL (Kingsgate-road site, Hampstead).—The senior mixed school is a two-story building, and contains the following accommodation:—Hall, 60 ft. by 30 ft. Classrooms, ground and first floors, each 50, 48, 48, 40, 40. Drawing classroom, 600 ft. area: science room, 600 ft. area. Heating by low-pressure hot-water apparatus. Special school consisting of three classrooms for twenty children each, total sixty, with a schoolkeeper's house. Area of site, 43,560 square ft. Playgrounds, area per child: Boys, 53 square ft.; girls, 76 sq. ft.:—

Dearing & Son	£20,388	Miskin & Sons	£18,602
Grover & Son	20,327	Gregar & Son	18,455
McCormick & Sons	19,231	Allen & Sons, Ltd.	18,379
L. H. & R. Roberts	18,828	Simpson & Son	18,070
Treasure & Son	18,610	Lawrance & Sons*	17,707

GLASS TABLETS, &c.:—

	H. Bouneau.	T. Cruwys.*	London School Furniture Co.*	Spencer & Co.
	s. d.	s. d.	s. d.	s. d.
Ground glass tablets, and fixing complete exclusive of tapering blocks ... per foot run	5 6	5 4	5 0	9 6
Tapering blocks, 3 ft. by 3 in. by 1¼ in. by 1¼ in., fixing complete ... each	0 7	0 6	0 4½	2 1
" " 3 in. " " "	0 8	0 7	0 6	3 0
" " 4½ in. " " "	0 9½	0 9	0 8	3 11
" " 6 in. " " "	0 11	0 10	0 10	4 3
" " 9 in. " " "	1 0	1 0	1 0	5 8
" " 12 in. " " "	1 2½	1 2	1 3	7 0

	H. Bouneau.*	T. Cruwys.*	London School Furniture Co.	E. Spencer & Co.
	s. d.	s. d.	s. d.	s. d.
Reglazing as per Item 1 of Specification ... per foot super	2 1	2 0	2 2	3 3
" " 1A " ... " "	1 6	1 6	2 2	2 9
Regrinding glass of old tablets as per Item 2 ... " "	1 1	1 0	1 0	2 0
" " " " " 2A ... " "	0 9	0 9	1 0	1 6
Reblacking as per Item 3 ... " "	0 2½	0 1	0 2	1 8
" " 3A ... " "	0 2	0 1	0 2	1 0
Cleaning and varnishing frames of tablets as per Item 4 ... per foot run of frame bead	0 3	0 3	0 3	0 4
Provision of back beads as per Item 5 ... " " "	0 1	0 1	0 1½	0 6
" front " " 5A ... " " "	0 2	0 2	0 2½	0 4
Provision of mirror plates as per Item 6 ... per each plate	0 3½	0 3	0 3	0 8
Provision of new plugs as per Item 7 ... " plug	0 4	0 4½	0 6	0 8
Tapering pieces as per Item 8—				
No. 1 size ... " piece	0 6½	0 7	0 8	3 0
No. 2 " ... " "	0 9½	0 9½	0 9	3 4
No. 3 " ... " "	0 10½	0 19	0 10	3 8
No. 4 " ... " "	0 10½	0 0	0 11	4 4
No. 5 " ... " "	1 0	1 0	1 0	4 8
No. 6 " ... " "	1 2	1 1	1 1	5 0
No. 7 " ... " "	1 2½	1 2	1 3	5 4
No. 8 " ... " "	1 3	1 3	1 4	5 8
No. 9 " ... " "	1 4½	1 4	1 6	6 6
No. 10 " ... " "	1 5	1 6	1 9	7 0
Day work as per Item 9 ... at per hour	1 0	1 0	1 1	1 3

See also next page.

Repairs on Schedule (Greenwich, Groups 1, 2, 3, and 5).—The percentages under "a" are for repairs, measured work, under "b" for sanitary measured work (executed under the orders of the Sanitary Surveyor); and under "c" for day work generally *i.e.*, wages and materials :—

—	Group 1.			Group 2.			Group 3.			Group 5.		
	a	*b*	*c*	*a*	*b*	*c*	*a*	*b*	*c*	*a*	*b*	*c*
J. & C. Bowyer	..	..	..	..	..	..	20	20	20	15	15	15
H. Groves	..	..	..	..	..	..	15	20	5	15	20	5
F. & H. F. Higgs	12½	25	10	12½	25	10	12½	25	10	12½	25	10
Holliday & Greenwood, Ltd.*	12½	17½	7½	12½	17½	7½	12½	17½	7½	12½	17½	7½
W. J. Howie	20	25	10	20	25	10	20	25	10	20	25	10
Johnson & Co.	15	15	10	15	15	10	15	15	10	15	15	10
T. D. Leng	..	..	..	..	..	..	17½	22½	17½	17½	22½	17½
Thomas & Edge	17½	17½	17½	17½	17½	17½	17½	17½	17½	17½	17½	17½

SPECIAL SCHOOL.—"Chaucer" School, Tabard-street, Borough. Plans of the proposed Special School, consisting of two classrooms to accommodate twenty children each, were passed by the Committee on April 21 :—

Bulled & Co.	£3,271	J. Greenwood	£2,946
Holliday & Greenwood, Ltd.	3,262	T. D. Leng	2,869
F. & H. F. Higgs	2,197	E. Triggs	2,867
W. Downs	3,099	Marshland & Son	2,812
J. Appleby	3,096	Johnson & Co., Ltd.	2,799
Treasure & Son	3,045	Thomas & Edge	2,733
Johnson & Co.	2,993	Turnbull & Son*	2,620

TOOTING GRAVENEY.—Repairing fourteen Boyd's stoves :—

Wontner Smith, Gray & Co.	£80 10	J. Bond	£31 10
Landers, Ltd.	37 0	Hendry & Pattisson, Ltd.	31 10
Cannon & Sons	35 0	Rockhill Bros.*	29 0
Coules & Sons	34 0		

VARIOUS CENTRES, Berner-street (Site of Old Rice Mills), Whitechapel.—The old buildings in the possession of the Board at Berner-street, Whitechapel (which were formerly used as Rice Mills, and are situated nearly opposite to the Graded School), are at present being temporarily used for the purposes of cookery and laundry centres. It is now proposed to pull down these premises, and to erect on the site a special school consisting of two class-rooms accommodating twenty children each, with a cookery and laundry centre over it, and a yard on the top of the building; and also to erect, as a separate building (on arches), a manual training centre for twenty boys, with a room for the science demonstrator. A covered playground will thus be formed for boys underneath :—

Rice & Son	£8,709	Marsland & Sons	£7,715
F. & H. F. Higgs	8,469	Lawrence & Sons	7,697
Gregar & Son	8,305	Wallis & Sons	7,663
J. Greenwood	8,276	C. Cox	7,600
Outhwaite & Son	8,075	J. & M. Patrick*	6,448
Treasure & Son	7,846		

MOVABLE SCREENS on a running contract :—

		Screens for flat floors.	Screens for stepped floors.
Wrinch & Sons	each	£6 5 0	—
General Builders, Ltd.	"	4 12 6	£4 17 6
Hammer & Co, Ltd.	"	4 0 0	4 10 0
Galbraith Bros.	"	3 19 6	4 2 0
Educational Supply Association, Ltd.	"	3 10 6	3 17 6
Wake & Dean, Ltd.	"	3 4 0	3 10 0
H. Bouneau*	"	3 0 0	3 10 0

TROLLEYS (for removing desks) :—

		Wheels fitted with wrought-iron sheaves.	Wheels fitted with gun-metal sheaves.
Spencer & Co.	each	19 9	25 0
General Builders, Ltd.	"	15 0	20 0
H. Bouneau	"	13 6	—
Wrinch & Sons	"	13 6	15 0
London School Furniture Co.	"	12 0	13 6
T. Cruwys*	"	10 9	13 3

WORKS TO OFFICES (Dalmain-road School, Forest Hill) :—

Rice & Son	£1,437	F. Bull	£1,172
Maxwell Bros., Ltd.	1,421	Leney & Son	1,095
G. Parker	1,290	J. & C. Bowyer	1,058
Falkner & Sons	1,245	H. & G. Mallett*	985
W. Downs	1,220		

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